SOIL SURVEY OF

Poinsett County, Arkansas

United States Department of Agriculture
Soil Conservation Service
In cooperation with
Arkansas Agricultural Experiment Station

This is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and agencies of the States, usually the Agricultural Experiment Stations. In some surveys other Federal and local agencies also contribute. The Soil Conservation Service has leadership for the Federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in the period 1966-71. Soil names and descriptions were approved in 1972. Unless otherwise indicated, statements in the publication refer to conditions in the county in 1972. This survey was made cooperatively by the Soil Conservation Service and the Arkansas Agricultural Experiment Station. It is part of the technical assistance furnished to the Poinsett Conservation District.

HOW TO USE THIS SOIL SURVEY

THIS SOIL SURVEY contains information that can be applied in managing farms and woodlands; in selecting sites for roads, ponds, buildings, and other structures; and in judging the suitability of tracts of land for farming, industry, and recreation.

Locating Soils

All the soils of Poinsett County are shown on the detailed map at the back of this publication. This map consists of many sheets made from aerial photographs. Each sheet is numbered to correspond with a number on the Index to Map Sheets.

On each sheet of the detailed map, soil areas are outlined and are identified by symbols. All areas marked with the same symbol are the same kind of soil. The soil symbol is inside the area if there is enough room; otherwise, it is outside and a pointer shows where the symbol belongs.

Finding and Using Information

The "Guide to Mapping Units" can be used to find information. This guide lists all the soils of the county in alphabetic order by map symbol and gives the capability classification and woodland group of each. It also shows the page where each soil is described.

Individual colored maps showing the relative suitability or degree of limitation of soils for many specific purposes can be developed by using the soil map and the information in the text. Translucent material can be used as an overlay over the soil map and colored to show soils that have the same limitation or suitability. For example, soils that have a slight limitation for a given use can be colored green, those with a moderate limitation can be colored yellow, and those with a severe limitation can be colored red.

Farmers and those who work with farmers can learn about use and management of the soils from the soil descriptions and from the discussions of the capability groups and the woodland groups.

Foresters and others can refer to the section "Use of the Soils for Woodland," where the soils of the county are grouped according to their suitability for trees.

Game managers, sportsmen, and others can find information about soils and wildlife in the section "Use of the Soils for Wildlife Habitat."

Community planners and others can read about soil properties that affect the choice of sites for dwellings, industrial buildings, and for recreation areas in the sections "Use of the Soils for Town and Country Planning" and "Use of the Soils for Recreational Development."

Engineers and builders can find, under "Engineering Uses of the Soils," tables that contain test data, estimates of soil properties, and information about soil features that affect engineering practices.

Scientists and others can read about how the soils formed and how they are classified in the section "Formation and Classification of the Soils."

Newcomers in Poinsett County may be especially interested in the section "General Soil Map," where broad patterns of soils are described. They may also be interested in the information about the county given in the section "General Nature of the County."

Cover: Loring soil in the foreground is used for pasture, and Calloway and Henry soils in the background are used for crops.

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SOIL SURVEY OF POINSETT COUNTY, ARKANSAS

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UNITED STATES DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE, IN COOPERATION WITH THE ARKANSAS AGRICULTURAL EXPERIMENT STATION

POINSETT COUNTY is in east-central Arkansas (fig. 1). Roughly rectangular in shape, it is about 42 miles wide and 18 miles long.

The county is bounded on the east by Mississippi County, on the south by Crittenden and Cross Counties, on the west by Jackson County, and on the north by Craighead County. According to United States census reports, the approximate total area is 487,680 acres, or 762 square miles. The approximate land area is 486,208 acres.

In 1970 the population was 26,822. Harrisburg, the county seat, had a population of 1,931 at that time, Trumann had a population of 5,938, and Marked Tree had a population of 3,208.

The economy of the county is based on farming. Except for a few manufacturing plants in Harrisburg, Marked Tree, and Trumann, most of the businesses provide farm services.

General Nature of the County

Discussed in this section are farming, physiography and drainage, and climate in Poinsett County. Statistics in the discussion of farming are from the 1969 Census of Agriculture.

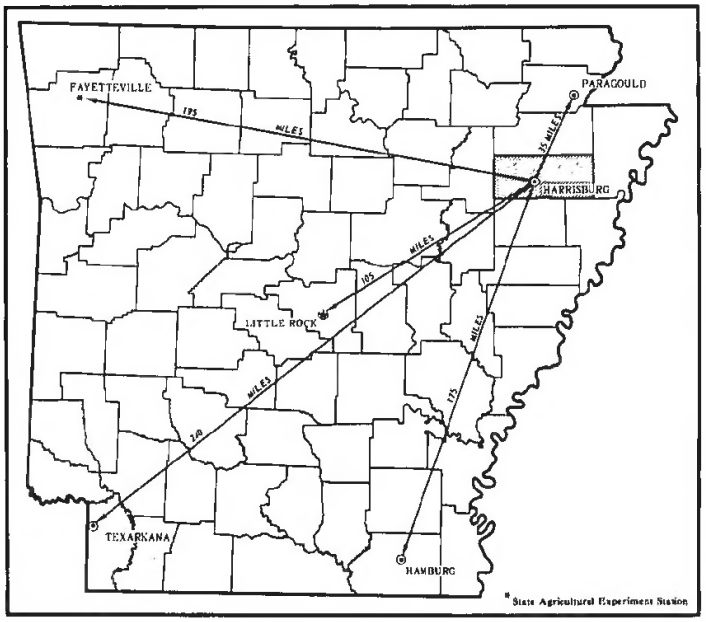

Figure 1.—Location of Poinsett County in Arkansas.

On the uplands the soils formed mainly in layers of wind-laid sediment. These uplands are across the western part of the county and include Crowley Ridge. They make up about 55 percent of the county. The wind-laid material has been removed by erosion, and the underlying gravelly and sandy material is exposed in some areas of Crowley Ridge.

Except for the steep slopes on Crowley Ridge, most of the upland soils are suitable for crops or improved pasture. Excess water is a moderate to very severe hazard on the level soils, and erosion is a moderate to very severe hazard on the more sloping ones.

About 45 percent of the county is bottom lands and the associated lakes and rivers. The bottom lands are mainly east of Crowley Ridge. The soils in this area are suited to farming. Except for a few large wooded tracts within the St. Francis River Floodway, nearly all this area is cultivated. Excess water drains away slowly or is ponded. It is a moderate to very severe hazard. With but a few exceptions, the hazard of erosion is slight in this area.

Elevations above mean sea level in the county range from about 400 feet atop Crowley Ridge near Harrisburg to about 140 feet near where the St. Francis River crosses the south boundary of the county.

Most of the soils in the county contain moderate to high amounts of plant nutrients and are among the most fertile in the State. The bottom land is part of the combined flood plains of the Mississippi, Tyronza, and St. Francis Rivers. It was subject to frequent flooding by these rivers until levees were constructed. The last widespread flood occurred in 1937. Since then, major flooding has been negligible except in the St. Francis River Floodway. Even in this area, which includes about 16 percent of the land area, the flooding occurs mainly from January to June. In most years the flooded soils dry early enough for warm season crops to be grown.

Farming

Farms in Poinsett County spread from the better drained parts of the uplands to the higher parts of the natural levees and then gradually to the poorly drained flats. The early economy was based on the plantation system, and cotton and rice were the cash crops. The people still depend mainly on farming for a livelihood.

Since acreage allotments were placed on cotton and rice, their importance has declined. As machinery has replaced

livestock as a source of power, corn and other feed crops have also declined in importance. Soybeans and small grains, however, have become more important.

Most farms in Poinsett County produce general crops such as cotton, rice, soybeans, and wheat. Some also produce grain sorghum and some have herds of beef cattle. Table 1 shows the acreage of principal crops and pasture grown in 1964 and 1969, and table 2 gives the kind and number of livestock in those years. Over much of the county, improved varieties, improved drainage outlets, major flood control measures on the flood plains, and other technology have lead to rapid expansion of cropland into the wetter areas and a great reduction in acreage of woodland.

According to the 1969 Census of Agriculture, nearly 84 percent of the land area of the county was in farms in 1969. The rest consisted of large wooded tracts, cities, towns, State-owned land, and transportation and utility facilities.

Farms in Poinsett County, as in most of eastern Arkansas, are decreasing in number and increasing in size. Between 1964 and 1969, the number of farms decreased from 1,357 to 1,042, and the average size of a farm increased from 292 acres to 392 acres.

Farms of 500 acres and larger increased from 194 in 1964 to 224 in 1969. All size classes of farms smaller than 260 acres decreased in size during that period. In 1969, 312 of the farm operators in the county were full owners, 350 were part owners, and 380 were tenants. Of these operators, 354 held jobs off the farm, and 204 of them worked at those jobs 100 days or more per year.

The number of livestock in the county has been decreasing for several years. Most beef cattle are of good grade. Milk cows are generally of poor quality and are kept mainly for home use.

Farm-related industrial enterprises in the county are varied. They include cotton gins, compresses, and warehouses; grain and soybean elevators and driers served by railway and truck lines; and farm equipment and supply companies.

TABLE 1.—*Acreage of principal crops and pasture in 1964 and 1969*

Crop	Number of acres in—	
	1964	1969
Soybeans (harvested for beans)	186,315	219,583
Cotton	77,162	73,481
Wheat	33,137	12,707
Other small grains (includes rice)	36,807	43,623
Cropland pastured	5,573	10,610
Hay (excluding sorghum hay)	1,135	914

TABLE 2.—*Number of livestock in 1964 and 1969*

Livestock	Number in 1964	Number in 1969
All cattle and calves	6,130	5,251
Milk cows	128	33
Hogs and pigs	2,594	2,447
Chickens [1]	10,843	13,301

[1] 3 months old or older.

Most of the farms are small enough for the operator and his family to do most of the work, and outside workers are hired during peak seasons only. The larger farms are operated by laborers who are supervised by the owner, manager or tenant. Tenants pay a fixed rent or a percentage of the crop for use of the land. Most of the land is farmed by operators who have sufficient modern equipment to farm efficiently. Most farmers fertilize according to the needs of the crop, and nearly all use chemicals for weed control.

Physiography and Drainage

The geological deposits at the surface of Poinsett County are alluvium and loess. Generally, alluvium makes up the eastern part of the county, and loess makes up the western part. These deposits are the parent material of the soils in the county. Total thickness of the alluvium exceeds 180 feet. It is underlain by unconsolidated material. The loess is about 2 to more than 15 feet thick and is underlain by unconsolidated old alluvium and coastal plain sediments. Bedrock probably is many hundreds of feet deep throughout the county.

The alluvium is a mixture of minerals from throughout the Mississippi River Basin. It is derived from many kinds of soils, rocks, and unconsolidated sediments that came from more than 24 states.

The topography of the county can be divided into three main areas: the level to gently undulating bottom lands, the moderately steep to steep Crowley Ridge, and the level to moderately sloping upland plain west of Crowley Ridge.

The topography of the bottom lands ranges from broad flats to areas of alternating swales and low ridges. Local differences in elevation are minor except along a few streambanks. Slopes are generally less than 1 percent, although they are as much as 3 percent on the sides of some low ridges.

In the Crowley Ridge area, topography is characterized by ridges with narrow, winding crests; short side slopes; and narrow valleys between the ridges. Slopes on the ridges are mostly 12 to 40 percent. Along valley drainageways they are generally less than 1 percent.

West of Crowley Ridge, the upland plain is mainly level to nearly level, and slopes are less than 3 percent. Scattered low ridges and escarpments along drainageways have slopes of 3 to 12 percent.

The county is well supplied with drainageways. Drainage is generally southwestward through a system of natural and improved drainageways and connecting artificial channels. The major natural drainageways are the Tyronza, St. Francis, L'Anguille, Little, and Cache Rivers; Three Mile Creek, Bayou DeView, Flag Slough, Brushy Creek; and St. Francis River Floodway.

Tyronza, St. Francis, and Little Rivers drain the eastern part of the county. The L'Anguille River drains the central part; and Bayou DeView, Flag Slough, Brushy Creek, Cache River and Three Mile Creek drain the western part. All of the county drains into the Mississippi River through the White and St. Francis Rivers. Harrisburg Lake furnishes recreation and several small lakes are used for duck hunting. Except for the Crowley Ridge area, the supply of ground water is abundant. Wells 10 inches in diameter drilled to a depth of about 120 feet furnish an unfailing flow of good to fair quality water at rates of about 1,500 to 1,800 gallons per minute.

Climate

Poinsett County has hot and humid summers, mild winters, and generally abundant rainfall. In table 3 are data on temperature and precipitation from the U.S. Weather Bureau Station in Marked Tree. These data are representative of Poinsett County.

Summer is characterized by bright sunshine and high temperatures that are broken by short periods in which thunderstorms are followed by cloudy, rainy, and cooler weather. In winter, cool, cloudy, rainy weather alternates with cold, clear weather. Snowfall is negligible, and periods of intense cold are of short duration. Sleet occurs only occasionally.

Precipitation is adequate for the needs of a farming area. It averages almost 50 inches a year, and only about 1 percent of this is snow. Rain is well distributed throughout the year. About 60 percent falls in winter and spring. Heavy rain is almost likely to occur in spring.

Short periods of drought affecting small parts of the county are frequent, and late summer droughts of a month or more have occurred. In some years droughts severe enough to injure seedlings and shallow-rooted crops occur in April, May, and June. In most years there is at least one drought lasting 15 days or more in the months of June through September. Such droughts damage but do not kill crops.

During the hottest part of the summer, evaporation of moisture from the soil can average a third of an inch a day. Drought days (days on which well-drained soils have little or no available moisture in the upper 12 inches) are most common in August, September, and October. Some can be expected in July.

Wetness is common in spring. In most years it does not interfere greatly with spring planting, but in low-lying areas planting sometimes must be delayed one week to several weeks in a wet season. Early frost may damage the quality or reduce the yield of cotton, rice, and late planted soybeans. Late frost occasionally damages crops planted early, and they may have to be replanted. The normally dry weather late in summer and in fall is favorable for harvesting but not for fall seeding or for the growth of pasture plants. Fall-sown small grain remains vigorous enough for grazing throughout most of the winter.

TABLE 3.—*Temperature and precipitation data*

[All data from Marked Tree. Period of record 1948–72]

Month	Average daily temperature	Averate total precipitation
	°F	*Inches*
January	38.9	4.7
February	42.1	4.4
March	49.5	5.3
April	61.3	5.1
May	69.9	4.8
June	78.3	3.3
July	80.9	4.0
August	78.9	3.8
September	72.2	3.2
October	62.0	2.5
November	49.6	4.0
December	41.6	4.8
Year	60.4	49.9

The average date of the last freeze in spring is March 26, and the average date of the first freeze in the fall is October 30. Thus, the freeze-free growing season in an average year is 218 days long.

How This Survey Was Made

Soil scientists made this survey to learn what kinds of soil are in Poinsett County, where they are located, and how they can be used. The scientists went into the county knowing they likely would find many soils they had already seen and perhaps some they had not. They observed the steepness, length, and shape of slopes, the size and speed of streams, the kinds of native plants or crops, and many facts about the soils. They dug many holes to expose soil profiles. A profile is the sequence of natural layers, or horizons, in a soil; it extends from the surface down into the parent material that has not been changed much by leaching or by the action of plant roots.

The soil scientists made comparisons among the profiles they studied, and they compared these profiles with those in counties nearby and in places more distant. They classified and named the soils according to nationwide, uniform procedures. The *soil series* and the *soil phase* are the categories of soil classification most used in a local survey.

Soils that have profiles almost alike make up a soil series. Except for different texture in the surface layer, all the soils of one series have major horizons that are similar in thickness, arrangement, and other important characteristics. Each soil series is named for a town or other geographic feature near the place where a soil of that series was first observed and mapped. Amagon and Memphis, for example, are the names of two soil series. All the soils in the United States having the same series name are essentially alike in those characteristics that affect their behavior in the undisturbed landscape.

Soils of one series can differ in texture of the surface layer and in slope, stoniness, or some other characteristic that affects use of the soils by man. On the basis of such differences, a soil series is divided into phases. The name of a soil phase indicates a feature that affects management. For example, Loring silt loam, 3 to 8 percent slopes, eroded, is one of several phases within the Loring series.

After a guide for classifying and naming the soils had been worked out, the soil scientists drew the boundaries of the individual soils on aerial photographs. These photographs show woodlands, buildings, field borders, trees, and other details that help in drawing boundaries accurately. The soil map at the back of this publication was prepared from aerial photographs.

The areas shown on a soil map are called mapping units. On most maps detailed enough to be useful in planning the management of farms and fields, a mapping unit is nearly equivalent to a soil phase. It is not exactly equivalent, because it is not practical to show on such a map all the small, scattered bits of soil of some kind that have been seen within an area that is dominantly of a recognized soil phase.

Some mapping units are made up of soils of different series, or of different phases within one series. Two such kinds of mapping units are shown on the soil map of Poinsett County—soil complexes and undifferentiated groups.

A soil complex consists of areas of two or more soils, so

intricately mixed or so small in size that they cannot be shown separately on the soil map. Each area of a complex contains some of each of the two or more dominant soils, and the pattern and relative proportions are about the same in all areas. Generally, the name of a soil complex consists of the names of the dominant soils joined by a hyphen. Foley-Calhoun complex is an example.

An undifferentiated group is made up of two or more soils that could be delineated individually but are shown as one unit because, for the purpose of the soil survey, there is little value in separating them. The pattern and proportion of soils are not uniform. An area shown on the map may be made up of only one of the dominant soils, or of two or more. Sharkey soils, frequently flooded, is an example.

While a soil survey is in progress, soil scientists take soil samples needed for laboratory measurements and for engineering tests. Laboratory data from the same kind of soil in other places are also assembled. Data on yields of crops under defined practices are assembled from farm records and from field or plot experiments on the same kind of soil. Yields under defined management are estimated for all the soils.

Soil scientists observe how soils behave when used as a growing place for native and cultivated plants, and as material for structures, foundations for structures, or covering for structures. They relate this behavior to properties of the soils. For example, they observe that filter fields for onsite disposal of sewage fail on a given kind of soil, and they relate this to the slow permeability of the soil or its high water table. They see that streets, road pavements, and foundations for houses are cracked on a soil and they relate this failure to the high shrink-swell potential of the soil material. Thus, they use observation and knowledge of soil properties, together with available research data, to predict limitations or suitability of soils for present and potential uses.

After data have been collected and tested for the key, or benchmark, soils in a survey area, the soil scientists set up trial groups of soils. They test these groups by further study and by consultation with farmers, agronomists, engineers, and others. They then adjust the groups according to the results of their studies and consultation. Thus, the groups that are finally evolved reflect up-to-date knowledge of the soils and their behavior under current methods of use and management.

Poinsett County joins the published soil surveys of Crittenden, Cross, Jackson, and Mississippi Counties, Arkansas. The soil boundaries are joined, and in most cases the soil names are the same. Exceptions are due largely to changes in definitions of some soil series, or because some soils of adjoining counties were not extensive enough to map in Poinsett County.

General Soil Map

The general soil map at the back of this survey shows, in color, the soil associations in Poinsett County. A soil association is a landscape that has a distinctive proportional pattern of soils. It normally consists of one or more major soils and at least one minor soil, and it is named for the major soils. The soils in one association may occur in another, but in a different pattern.

A map showing soil associations is useful to people who want a general idea of the soils in a county, who want to compare different parts of a county, or who want to know the location of large tracts that are suitable for a certain kind of land use. Such a map is a useful general guide in managing a watershed, a wooded tract, or a wildlife area, or in planning engineering works, recreational facilities, and community developments. It is not a suitable map for planning the management of a farm or fields, or for selecting the exact location of a road, building, or similar structure, because the soils in any one association ordinarily differ in slope, depth, drainage, and other characteristics that affect their management.

The soil associations in Poinsett County are discussed in the following paragraphs.

The soil associations in this survey have been grouped into 3 general kinds of landscapes for broad interpretative purposes. Each of the broad groups and their included soil associations are described in the following pages. The terms for texture used in the titles for the associations apply to the texture of the surface layer. For example, in the title of association 2, the word "loamy" refers to the texture of the surface layer.

Soils Formed in Alluvial Sediments in Slack-Water Areas on Flood Plains of Former Rivers

These soils are in one association, the Jackport association, which makes up about 9 percent of the county. These clayey soils are on broad flats. They formed in sediments deposited mainly by slow-flowing, intermittent streams.

The soils in this group are used extensively for cultivated crops, and few large wooded tracts remain.

1. Jackport association

Poorly drained, level, mostly clayey soils on broad flats

This association is in the extreme western part of the county on broad flats. Natural drainageways are mainly slow-flowing, intermittent streams.

This association makes up about 9 percent of the county. Jackport soils make up about 70 percent of the association, and Calhoun, Calloway, Foley, Grenada, Henry, Hillemann, and Tichnor soils and water areas make up the remaining 30 percent.

Jackport soils have a surface layer of very dark grayish-brown silty clay loam. The subsurface layer is gray, mottled silty clay. The subsoil is dark-gray, grayish-brown, and gray, mottled clay and silty clay. The underlying material is gray, mottled silty clay loam.

Soils in this association are suitable for farming, and most of the acreage is cultivated. Surface drainage is needed for efficient farm management. Farms range in size from about 20 acres to 400 acres. About 75 percent of the farms are owner-operated, and the rest are rented. The main crops are rice and soybeans, but cotton, grain sorghum, and winter small grain are grown.

Because of wetness, the seasonal high water table, high shrink-swell potential, and low bearing capacity, the soils in this association are poorly suited to use for residences and other buildings or for highways. Soils in the association have severe limitations for septic-tank absorption fields because of the slow percolation rate and the seasonal high water table.

Soils Formed Mainly in Wind-laid Sediments on Uplands and in Sediments on Flood Plains of Small Streams That Drain the Uplands

These soils are in associations 2, 3, 4, and 5. Together they make up about 46 percent of the county. They are in the Southern Mississippi Valley Silty Uplands in and west of Crowley Ridge. These are well drained to poorly drained loamy soils sorted by wind from ancient flood plains and laid down over older loamy and clayey alluvium.

The soils in this group, except for those on Crowley Ridge, are used extensively for cultivated crops. In the wooded areas, vegetation is mainly cutover hardwoods.

2. *Tichnor association*

Poorly drained, level, loamy soils on flood plains

This association is in the western part of the county. It consists of level flood plains along Bayou DeView, Brushy Creek, and L'Anguille River.

This association makes up about 5 percent of the county. Tichnor soils make up about 74 percent of the association, and Amagon, Henry, and Jackport soils and water areas make up the remaining 26 percent.

Tichnor soils have a surface layer of dark grayish-brown silt loam. The subsurface layer is light brownish-gray and gray, mottled silt loam. The subsoil is light brownish-gray and gray, mottled silty clay loam.

Because of frequent flooding, Tichnor soils are poorly suited to farming. Floods generally occur between January and June. Only a small part of the association is cultivated. Most of the area is woodland, and part is within the State-owned Bayou DeView Game Restoration Area. Individual areas of Tichnor soils are as large as a few hundred acres in size. About 80 percent of the farms are owner-operated, and the rest are rented. The main crop is soybeans.

Because of wetness, frequent flooding, and the seasonal high water table, Tichnor soils have severe limitations for residences, other buildings, highways, and septic-tank absorption fields.

3. *Henry-Hillemann-Calloway association*

Poorly drained and somewhat poorly drained, level and nearly level loamy soils on uplands

This association is in the western part of the county. It consists of broad flats broken by low ridges that rise 1 to 5 feet higher than the flats. Natural drainageways are mainly slow-flowing, intermittent streams. Henry soils are on the lower part of flats, and Hillemann and Calloway soils are on the higher part. Some of the Calloway soils are on the ridges.

This association makes up about 31 percent of the county. Henry soils make up about 48 percent of the association; Hillemann soils, about 34 percent; Calloway soils, about 13 percent; and Grenada and Tichnor soils make up the remaining 5 percent.

Henry soils are poorly drained. The surface layer is grayish-brown silt loam. The subsurface layer is gray, mottled silt loam. The upper part of the subsoil is a firm, brittle fragipan of gray, mottled silt loam. The lower part is gray, mottled silty clay loam. The underlying material is light brownish-gray, mottled silt loam.

Hillemann soils are somewhat poorly drained. The surface layer is dark-gray silt loam. The subsurface layer is light brownish-gray, mottled silt loam. The subsoil is light-gray, light brownish-gray and grayish-brown, mottled silty clay loam.

Calloway soils are somewhat poorly drained. The surface layer is dark grayish-brown and grayish-brown silt loam. The upper part of the subsoil is yellowish-brown and grayish-brown, mottled silt loam. The lower part is a brittle fragipan of light brownish-gray, mottled silt loam and silty clay loam. The underlying material is mottled silty clay loam.

Soils in this association are suitable for farming, and nearly all the acreage is cultivated. Surface drainage is needed for efficient farm management. Farms range in size from 20 to 1,000 acres. About 75 percent of them are operated by the owners, and the rest are rented. The main crops are rice, cotton, and soybeans, but grain sorghum and winter small grain are also grown.

Because of wetness, seasonal high water table, and moderate to low bearing capacity, the soils of this association are poorly suited for residences and other buildings or for highways. Soils in this association have severe limitations for septic-tank absorption fields because of the slow percolation rate and the seasonal high water table.

4. *Falaya-Collins association*

Somewhat poorly drained and moderately well drained, level loamy soils on flood plains

This association is in the central part of the county, adjacent to Crowley Bridge. It consists of level flood plains and alluvial fans. Meandering streams drain adjacent hilly uplands.

This association makes up about 4 percent of the county. Falaya soils make up about 50 percent of the association; Collins soils, about 40 percent; and Dundee, Mhoon, and Tichnor soils, about 10 percent.

Falaya soils are somewhat poorly drained. The surface layer is brown silt loam. The upper part of the underlying material is pale-brown and grayish-brown, mottled silt loam. The lower part is a buried soil of predominantly grayish, mottled silt loam.

Collins soils are moderately well drained. The surface layer is brown silt loam. The upper part of the underlying material is brown silt loam. The middle part is pale-brown, mottled silt loam. The lower part is shades of brown and gray, or gray, mottled silt loam.

Soils in this association are productive and suitable for farming. Except for a few small scattered patches of hardwood trees, mainly along drainageways, most of the acreage is cultivated. Surface drainage is needed in places for efficient farm management. Most of the farms are 40 to several hundred acres in size. About half the farms are owner-operated, and the other half are rented. The main crops are cotton and soybeans, but winter small grain is also grown.

Because of wetness, occasional flooding, the seasonal high water table, and low bearing capacity, the soils of this association are poorly suited to use for residences and other buildings or for highways. Soils in this association have severe limitations for septic-tank absorption fields because of the slow percolation rate, the seasonal high water table, and occasional flooding.

5. *Loring-Brandon-Memphis association*

Moderately well drained and well drained, gently sloping to steep loamy soils on uplands

This association is in the central part of the county within the Crowley Ridge area. It consists of narrow, gently sloping to moderately steep ridges with steep side slopes and narrow, winding valleys between the ridges.

This association makes up about 6 percent of the county. Loring soils make up about 45 percent of the association; Brandon soils, about 21 percent; Memphis soils, about 15 percent; and Convent, Falaya, and Saffell soils and water areas, about 19 percent.

Loring soils are moderately well drained. The surface and subsurface layers are brown silt loam. The upper part of the subsoil is strong-brown silty clay loam, and the lower part is a brittle fragipan of strong-brown, mottled and streaked silty clay loam and silt loam.

Brandon soils are well drained. The surface layer is dark grayish-brown silt loam. The subsurface layer is brown silt loam. The upper part of the subsoil is strong-brown silt loam, and the middle part is yellowish-red silty clay loam. The lower part of the subsoil and the underlying material are yellowish-red gravelly sandy clay loam.

Memphis soils are well drained. The surface layer is dark grayish-brown silt loam. The subsurface layer is dark yellowish-brown silt loam. The subsoil is dark-brown silt loam and silty clay loam, and the underlying material is dark-brown silt loam.

Most of this association is poorly suited to farming because of the slopes, and much of the acreage is woodland. Scattered areas on the tops of ridges are in pasture.

Because of the slopes, most of the association is poorly suited to use for highways, residences and other buildings, or septic-tank absorption fields. Considerable grading is necessary to prepare building sites in most of the area. The hazard of erosion is severe, and the soils are difficult to stabilize.

Soils Formed in Alluvial Sediments on Natural Levees and Slack-Water Areas on Flood Plains of Large Rivers

These soils are in associations 6, 7, 8, 9, and 10 and together make up about 45 percent of the county. They are in the part of the county that is within the Southern Mississippi Valley Alluvium. These loamy and clayey soils formed in sediments of the Mississippi River and its local tributaries.

The soils in this group are used extensively for cultivated crops, and few large wooded tracts remain.

6. *Mhoon-Dundee association*

Poorly drained and somewhat poorly drained, level and nearly level loamy soils on natural levees

This association is in the eastern part of the county between Crowley Ridge and the St. Francis River Floodway. It consists of level and nearly level loamy soils on natural levees. In most places, the Dundee soils are on the higher parts of the area and the Mhoon soils on the lower part.

This association makes up about 17 percent of the county. Mhoon soils make up about 48 percent of the association; Dundee soils, about 34 percent; and Amagon, Beulah, Dubbs, Hayti, Sharkey, and Tunica soils make up the remaining 18 percent.

Mhoon soils are poorly drained. The surface layer is dark grayish-brown silt loam. The upper part of the subsoil is gray, mottled silt loam; the middle part is gray, mottled silty clay loam; and the lower part is gray, mottled silt loam. The underlying material is gray and dark-gray, mottled silty clay loam and silt loam.

Dundee soils are somewhat poorly drained. The surface layer is dark grayish-brown silt loam. The upper part of the subsoil is dark grayish-brown, light brownish-gray, and gray, mottled silt loam; the middle part is light brownish-gray, mottled silty clay loam; and the lower part is light brownish-gray, mottled silt loam. The underlying material is brown, mottled sandy loam and loamy fine sandy.

This association is one of the major cotton farming areas in the county. Nearly all of the acreage is cultivated, except for a few patches of hardwood trees along drainageways. Surface drainage is needed for efficient farm management. Most of the farms range from 80 to 640 acres and are highly mechanized. About half of the farms are owner-operated, and the rest are rented. The main crops are cotton and soybeans, but grain sorghum and winter small grain are also grown.

Because of wetness, the seasonal high water table, and moderate to low bearing capacity, the soils of this association are poorly suited to use for residences, other buildings, or highways. Soils in this association have severe limitations for septic-tank absorption fields because of the slow percolation rate and the seasonal high water table.

7. *Sharkey association*

Poorly drained, level clayey soils on frequently flooded, depressed parts of slack-water areas

This association is in the eastern part of the county within the St. Francis River Floodway. The area is depressed slack-water flats. Natural drainageways are sluggish bayous and sloughs.

This association makes up about 8 percent of the county. Sharkey soils make up about 70 percent, and Dundee, Hayti, and Mhoon soils, levees, and water areas make up the remaining 30 percent.

Sharkey soils are poorly drained. The surface layer is very dark grayish-brown clay. The subsoil is dark-gray, mottled clay. The underlying material is dark-gray and gray, mottled silty clay and silty clay loam.

Soils of this association are productive, but because of the frequent flooding, their use for farming is severely limited. About 65 percent of the acreage is cultivated. The remainder is scattered tracts of hardwood trees, mainly north of Highway 63. Flooding occurs mainly between January and June. Most farms range from 100 to 1,000 acres in size and are highly mechanized. About 25 percent of the farms are owner-operated, and the rest are rented. The main crop is soybeans.

These soils shrink and crack as they dry. They expand and cracks seal when they are wet. Because of wetness, instability, and low bearing strength, they are poorly suited to use for highways. Frequent flooding makes them unsuited to use for residences and other buildings and unsuited to septic-tank absorption fields.

8. *Sharkey-Steele association*

Poorly drained and moderately well drained, level clayey to sandy soils in slack-water areas

This association is in the eastern part of the county. The area is slack-water flats. Parts of the flats are clayey, and other parts have an overwash of loamy and sandy material. Natural drainageways are sluggish bayous and sloughs.

This association makes up about 11 percent of the county. Sharkey soils make up about 35 percent of the association; Steele soils, about 18 percent; soils transitional between Sharkey and Steele soils, about 18 percent; and Hayti, Mhoon, and Tunica soils and water areas, the remaining 29 percent.

Sharkey soils are poorly drained. The surface layer is very dark grayish-brown clay. The subsoil is dark-gray, mottled clay. The underlying material is dark-gray and gray, mottled silty clay and silty clay loam.

Steele soils are moderately well drained. The surface layer is grayish-brown loamy fine sand. The upper part of the underlying material is pale-brown and grayish-brown loamy fine sand. Below is gray, mottled clay.

This association is one of the major cotton farming areas in the county. Nearly all of the acreage is cultivated, except for a few patches of hardwood trees along drainageways. Surface drainage is needed for efficient farm management. Most of the farms range from 160 to 640 acres in size and are highly mechanized. About half the farms are owner-operated, and the other half are rented. The main crops are cotton and soybeans, but grain sorghum, alfalfa, and winter small grain are also grown.

The clayey soils in this association shrink and crack as they dry. They expand and cracks seal when they are wet. Because of wetness and low bearing capacity, soils in this association are poorly suited for residences and other buildings and are poorly suited for highways. They have severe limitations for septic-tank absorption fields because of the slow percolation rate and the seasonal high water table.

9. Tunica-Sharkey association

Poorly drained, level and undulating clayey soils in slack-water areas

This association is in the eastern part of the county, mainly along the St. Francis River and Little River. It consists of slack-water flats broken by gently undulating areas of alternating swales and low ridges. The soils are intermingled, but in most places the Tunica soils are on the higher lying and undulating parts of the area.

This association makes up about 3 percent of the county. Tunica soils make up about 60 percent of the association; Sharkey soils, about 25 percent; and Bowdre, Convent, Hayti, and Steele soils and water areas, the remaining 15 percent.

Tunica soils are poorly drained. The surface layer is very dark grayish-brown clay. The subsoil is dark-gray, mottled clay. Below this is gray, mottled silt loam underlain by brown and light-gray, mottled loamy fine sand.

Sharkey soils are poorly drained. The surface layer is very dark grayish-brown, mottled clay. The subsoil is dark-gray, mottled clay. The underlying material is dark-gray and gray, mottled silty clay and silty clay loam.

This association is one of the major cotton farming areas in the county. Nearly all of the acreage is cultivated, except for scattered patches of hardwood trees along drainageways. Surface drainage is needed for efficient farm management. Most of the farms range from 80 to 640 acres in size and are highly mechanized. About half the farms are owner-operated, and the rest are rented. The main crops are cotton and soybeans, but grain sorghum, alfalfa, and winter small grain are also grown.

Soils in this association shrink and crack as they dry; they expand and cracks seal when they are wet. Because of wetness, instability, and low bearing capacity, the soils are poorly suited to use for residences, other buildings, or highways. They have severe limitations for septic tank absorption fields because of the slow percolation rate and the seasonal high water table.

10. Sharkey-Alligator association

Poorly drained, level clayey soils in slack-water areas

This association is in the southeastern part of the county in slack-water flats. Natural drainageways are sluggish bayous and sloughs.

This association makes up about 6 percent of the county. Sharkey soils make up about 56 percent of the association; Alligator soils, 31 percent; and Dubbs, Dundee, Earle, and Tunica soils and water areas, the remaining 13 percent.

Sharkey soils are poorly drained. The surface layer is very dark grayish-brown clay. The subsoil is dark-gray, mottled clay. The underlying material is dark-gray and gray, mottled silty clay and silty clay loam.

Alligator soils are poorly drained. The surface layer is dark-grayish brown clay. The upper part of the subsoil is gray, mottled clay, and the middle part is light-gray, mottled clay. The lower part is grayish-brown, mottled clay. The underlying material is olive-gray and gray, mottled clay.

Soils in this association are productive and suitable for farming. Nearly all of the acreage is cultivated, except for scattered patches of hardwood trees. Surface drainage is needed for efficient farm management. Most farms range from 160 to 1,000 acres in size and are highly mechanized. About 40 percent of the farms are owner-operated, and the rest are rented. The main crops are cotton and soybeans, but winter small grain is also grown.

Descriptions of the Soils

In this section the soils of Poinsett County are described in detail and their use and management are discussed. Each soil series is described in detail, and then, briefly, the mapping units in that series are described. Unless it is specifically mentioned otherwise, it is to be assumed that what is stated about the soil series holds true for the mapping units in that series. Thus, to get full information about any one mapping unit, it is necessary to read both the description of the mapping unit and the description of the soil series to which it belongs.

An important part of the description of each soil series is the soil profile; that is, the sequence of layers from the surface downward to rock or other underlying material. Each series contains two descriptions of this profile. The first is brief and in terms familiar to the layman. The second is much more detailed and is for those who need to make thorough and precise studies of soils. Color terms are for moist soil unless otherwise stated. The profile described in the soil series is representative for mapping units in that series. If a given mapping unit has a profile different from the one described in the series, the differences are stated in the description of the mapping unit, or they are apparent in the name of the mapping unit. The description of each

mapping unit contains suggestions on management of the soil.

Preceding the name of each mapping unit is a symbol that identifies the mapping unit on the detailed soil map. Listed at the end of each description of a mapping unit are the capability unit and woodland group in which the mapping unit has been placed. The page for the description of each mapping unit can be learned by referring to the "Guide to Mapping Units" at the back of this survey.

The acreage and proportionate extent of each mapping unit are shown in table 4. Many of the terms used in describing soils can be found in the Glossary, and more detailed information about the terminology and methods of soil mapping can be obtained from the Soil Survey Manual (*9*).[1]

Alligator Series

The Alligator series consists of poorly drained, level soils in old slack-water areas on Mississippi River bottom land. These soils formed in thick beds of clayey sediments. Natural vegetation is water-tolerant hardwood trees.

In a representative profile the surface layer is dark grayish-brown clay about 4 inches thick. The upper part of the subsoil is gray, mottled clay about 13 inches thick, and the middle part is light-gray, mottled clay about 21 inches thick. The lower part is grayish-brown, mottled clay that extends to a depth of about 56 inches. The underlying material is olive-gray and gray, mottled clay.

TABLE 4.—*Approximate acreage and proportionate extent of the soils*

Soil	Acres	Percent
Alligator clay	9,750	2.0
Amagon silt loam	1,730	.4
Beulah fine sandy loam, undulating	1,420	.3
Bowdre silty clay loam, undulating	1,410	.3
Brandon silt loam, 3 to 12 percent slopes	1,700	.3
Brandon-Saffell complex, 12 to 20 percent slopes	8,320	1.7
Calloway silt loam, 0 to 1 percent slopes	14,810	3.0
Calloway silt loam, 1 to 3 percent slopes	5,760	1.2
Collins silt loam, occasionally flooded	8,400	1.7
Convent silt loam	3,180	.7
Dubbs silt loam, undulating	6,650	1.4
Dundee silt loam, 0 to 2 percent slopes	28,630	5.9
Earle silty clay loam	620	.1
Falaya silt loam, occasionally flooded	9,700	2.0
Foley-Calhoun complex	4,840	1.0
Grenada silt loam, 1 to 3 percent slopes	4,630	.9
Hayti soils	21,410	4.4
Henry silt loam	72,770	15.0
Hillemann silt loam	51,890	10.7
Jackport silty clay loam	32,540	6.7
Loring silt loam, 3 to 8 percent slopes, eroded	6,450	1.3
Loring silt loam, 8 to 12 percent slopes, eroded	4,570	.9
Memphis-Loring complex, 12 to 40 percent slopes	6,280	1.3
Mhoon silt loam	39,950	8.2
Sharkey clay	34,950	7.2
Sharkey-Steele complex	35,730	7.3
Sharkey soils, frequently flooded	30,000	6.2
Tichnor soils, frequently flooded	19,050	3.9
Tunica clay, 0 to 1 percent slopes	4,690	1.0
Tunica clay, undulating	6,450	1.3
Levees	2,270	.5
Water	5,658	1.2
Total	486,208	100.0

[1] Italic numbers in parentheses refer to Literature Cited, p. 63.

Alligator soils are moderate to high in natural fertility. Content of organic matter is medium to low. Permeability is very slow, and available water capacity is high. These soils respond well to fertilization. Tilth is difficult to maintain because the soils are high in content of clay, and a seedbed is difficult to prepare. Hard, persistent clods form if these soils are plowed when wet. These soils shrink and crack as they dry; they expand and the cracks seal when they are wet.

If drained and well managed, these soils are suited to most crops grown in the county. Most of the acreage is cultivated.

Representative profile of Alligator clay, in a moist, cultivated area in the NW¼SE¼SE¼ sec. 24, T. 10 N., R. 6 E.:

Ap—0 to 4 inches, dark grayish-brown (10YR 4/2) clay; moderate, medium, granular structure; firm, plastic; common fine roots; very strongly acid; clear, smooth boundary.

B21g—4 to 17 inches, gray (10YR 5/1) clay; common medium, distinct, yellowish-brown (10YR 5/4) mottles; moderate, medium, angular blocky structure; firm, plastic; common fine roots; shiny pressure faces on peds; very strongly acid; gradual, smooth boundary.

B22g—17 to 38 inches, light-gray (10YR 6/1) clay; many medium, distinct, strong-brown (7.5YR 5/6) mottles; moderate, medium, angular blocky structure; firm, plastic; very strongly acid; clear, smooth boundary.

B23g—38 to 56 inches, grayish-brown (2.5Y 5/2) clay; common fine, distinct, yellowish-brown mottles; moderate, medium, angular blocky structure; firm, plastic; shiny pressure faces on peds; few slickensides; very strongly acid; clear, wavy boundary.

C1g—56 to 65 inches, olive-gray (5Y 4/2) clay; moderate, medium, angular blocky structure; firm; plastic; shiny pressure faces on peds; few slickensides; neutral; clear, wavy boundary.

C2g—65 to 80 inches, gray (10YR 5/1) clay; many medium, dark yellowish-brown (10YR 4/4) mottles; moderate, medium, angular blocky structure; firm; plastic; shiny pressure faces on peds; few slickensides; common white gypsum crystals; mildly alkaline.

The Ap horizon is very dark gray to brown. The Bg horizons are gray, light gray, dark gray, or grayish brown mottled with yellowish brown, strong brown, or yellowish red. The Cg horizons are light-gray to olive-gray silty clay or clay. Reaction of the A and Bg horizons is very strongly acid or strongly acid, and reaction of the Cg horizon is neutral to mildly alkaline.

Alligator soils are associated with Amagon, Earle, Sharkey, and Tunica soils. They contain more clay throughout than Amagon soils. They formed in thicker beds of clayey sediment than did Earle and Tunica soils, and they are more poorly drained than Earle soils. Alligator soils are more acid in the upper 40 inches than Sharkey and Tunica soils.

Aa—Alligator clay. This level soil is commonly in large tracts on broad flats. Mapped areas range from 20 to more than 1,000 acres in size. Included in mapping are small areas of undulating soils and spots of Amagon, Earle, Sharkey, and Tunica soils.

This soil is suited to cultivated crops, but excess water is a severe hazard. Farming operations are often delayed several days after a rain unless surface drains have been installed. Under good management that includes adequate drainage, clean-tilled crops that leave large amounts of residue can be grown year after year.

The main crops are soybeans and cotton. Other suitable crops are grain sorghum, rice, and winter small grain. Suitable pasture plants are bermudagrass, tall fescue, and white clover. Capability unit IIIw-1; woodland group 2w6.

Amagon Series

The Amagon series consists of poorly drained level soils on broad flats and in shallow depressions on the lower parts of old natural levees. These soils formed in stratified

beds of loamy sediments. The natural vegetation is water-tolerant hardwood trees.

In a representative profile the surface layer is dark grayish-brown and dark-gray silt loam about 10 inches thick. The subsoil extends to a depth of about 42 inches. The upper part is grayish-brown, mottled silty clay loam about 9 inches thick. The middle part is light-gray, mottled silt loam about 10 inches thick. The lower part is gray, mottled silt loam. The underlying material is stratified layers of gray and grayish-brown, mottled loamy material that extend to a depth of 73 inches or more.

Amagon soils are moderate in natural fertility. Content of organic matter is low. Permeability is slow, and available water capacity is high. These soils respond well to fertilization. Tilth is easy to maintain. A plow pan has formed beneath plow depth in places. This restricts root penetration and movement of water through the soil.

These soils are suited to most crops commonly grown in the county. Nearly all of the acreage is cultivated.

Representative profile of Amagon silt loam, in a moist, cultivated area in the NW¼NE¼SE¼ sec. 26, T. 10 N., R. 6 E.:

Ap—0 to 6 inches, dark grayish-brown (10YR 4/2) silt loam; weak, medium granular structure; friable; few fine roots; strongly acid; abrupt, smooth boundary.

A1—6 to 10 inches, dark-gray (10YR 4/1) silt loam; few medium, distinct, dark yellowish-brown (10YR 4/4) mottles; weak, medium, subangular blocky structure; friable; few fine roots; strongly acid; clear, wavy boundary.

B21tg—10 to 19 inches, grayish-brown (10YR 5/2) silty clay loam; common medium, faint, brown (10YR 5/3) and distinct, yellowish-brown (10YR 5/6) mottles; moderate, medium, subangular blocky structure; firm; slightly plastic; common patchy clay films on faces of peds; few dark concretions; strongly acid; clear, wavy boundary.

B22tg—19 to 29 inches, light-gray (10YR 6/1) silt loam; common medium, distinct, yellowish-brown (10YR 5/6) mottles; moderate, medium, subangular blocky structure; firm; strongly acid; clear, wavy boundary.

B3g—29 to 42 inches, gray (10YR 6/1) silt loam; few medium, prominent, yellowish-red (5YR 4/6) mottles; weak, medium, subangular blocky structure; friable; strongly acid; clear, wavy boundary.

C1g—42 to 55 inches, gray (10YR 5/1) silt loam; common fine and medium, dark yellowish-brown (10YR 3/4) and yellowish-brown (10YR 5/6) mottles; massive; few fine roots; few fine, dark concretions; medium acid; clear, wavy boundary.

C2g—55 to 64 inches, gray (10YR 6/1) very fine sandy loam; common fine and medium, distinct, dark yellowish-brown (10YR 3/4) and few fine, distinct, yellowish-brown mottles; massive; few fine roots; few fine, dark concretions; medium acid; clear, wavy boundary.

IIC3—64 to 73 inches, grayish-brown (10YR 5/2) sandy loam; few fine, dark yellowish-brown and yellowish-brown mottles; massive; few bedding planes; few lenses of gray (10YR 5/1) clay loam; few fine, dark concretions; medium acid.

The Ap horizon is dark grayish brown or grayish brown. The A1 horizon is dark gray to grayish brown. Some profiles have an A2g horizon of gray or light brownish-gray silt loam 3 to 6 inches thick. The B2tg horizon is gray, light-gray, light brownish-gray, or grayish-brown silt loam or silty clay loam. The B3g horizon is gray to light brownish-gray silt loam or silty clay loam. The C horizon is stratified layers of loamy sediments without regular sequence. Reaction ranges from medium acid to very strongly acid throughout the profile.

Amagon soils are associated with Alligator, Calhoun, Dundee, Foley, and Tichnor soils. They are loamy throughout rather than clayey as are the Alligator soils. Amagon soils lack the tongues of the A horizon into the B horizon that Calhoun soils have. They are more poorly drained than the Dundee soils. They lack the high sodium content in the B horizon that Foley soils have, and they have a thinner A horizon than the Tichnor soils.

An—Amagon silt loam. This level soil is on broad flats and in shallow depressions. Slopes are less than 1 percent. Individual areas range from about 10 to 160 acres. Included in mapping are spots of Alligator, Calhoun, Dundee, Foley, and Tichnor soils.

This soil is suited to farming, but excess water is a severe hazard. Farming operations are delayed several days after a rain unless surface drains are installed. Under good management that includes adequate drainage, crops that leave large amounts of residue can be safely grown year after year.

The main crops are soybeans, cotton, and rice. Grain sorghum is a suitable crop, and winter small grain can be grown where surface drainage is adequate. Adapted pasture plants are bermudagrass, bahiagrass, tall fescue, and white clover. Capability unit IIIw-2; woodland group 1w6.

Beulah Series

The Beulah series consists of somewhat excessively drained, undulating soils on the higher parts of natural levees bordering bayous and along abandoned stream channels. These soils formed in stratified loamy and sandy sediments. The natural vegetation is hardwood trees.

In a representative profile the surface layer is dark grayish-brown fine sandy loam about 9 inches thick. The subsoil is dark yellowish-brown, dark-brown, and strong-brown fine sandy loam about 29 inches thick. The underlying material is strong-brown and yellowish-brown loamy fine sand.

Beulah soils are moderate in natural fertility. Content of organic matter is medium to low. Permeability is moderately rapid, and available water capacity is medium to low. These soils respond well to fertilization. Tilth is easy to maintain. A plowpan has formed in places. This layer restricts root penetration and movement of water through the soil. These soils warm early in spring and can be planted early.

Beulah soils are suited to most crops commonly grown in the county. Nearly all of the acreage is cultivated.

Representative profile of Beulah fine sandy loam, undulating, in a moist, cultivated area in the SE¼SW¼SW¼ sec. 11, T. 12 N., R. 5 E.:

Ap—0 to 9 inches, dark grayish-brown (10YR 4/2) fine sandy loam; weak, fine, granular structure; very friable; many fine roots; very strongly acid; abrupt, smooth boundary.

B1—9 to 22 inches, dark yellowish-brown (10YR 4/4) fine sandy loam; weak, medium, subangular blocky structure; friable; few fine roots; very strongly acid; clear, wavy boundary.

B2—22 to 30 inches, dark-brown (7.5YR 4/4) fine sandy loam; weak, medium, subangular blocky structure; friable; few fine roots; very strongly acid; clear, smooth boundary.

B3—30 to 38 inches, strong-brown (7.5YR 5/8) fine sandy loam; weak, medium, subangular blocky structure; very friable; very strongly acid; clear, wavy boundary.

C1—38 to 45 inches, strong-brown (7.5YR 5/8) loamy fine sand; single grained; loose; very strongly acid; clear, smooth boundary.

C2—45 to 56 inches, yellowish-brown (10YR 5/6) loamy fine sand; single grained; loose; medium acid; clear, wavy boundary.

C3—56 to 72 inches, yellowish-brown (10YR 5/6) loamy fine sand; few medium and coarse, distinct, light yellowish-brown (10YR 6/4) mottles; single grained; loose; medium acid.

The Ap horizon is dark grayish brown or brown. The B horizon is strong brown, dark brown, or dark yellowish brown. The C horizon is yellowish-brown to strong-brown fine sandy loam or loamy fine sand. Reaction ranges from medium acid to very strongly acid throughout the profile.

Beulah soils are associated with Dubbs and Dundee soils. They contain more sand than the associated soils, and they lack the B horizon of clay accumulation that the associated soils have.

BeU—Beulah fine sandy loam, undulating. This soil is

in areas of alternating long, narrow swales and low ridges that rise 1 to 4 feet above the swales. Areas range from 10 to 60 acres in size. Slopes are 0 to 3 percent. Included in mapping are spots of Dubbs and Dundee soils.

This soil is well suited to farming. Because of the limited available water capacity, droughtiness is a moderate limitation to use. The hazard of soil blowing is moderate during spring if the soil is bare. Soils in the swales remain moist longer after a rain, but excess water rarely stands long enough to damage crops. Tillage is occasionally delayed for a few days after a heavy rain because of excess water in the swales. Under good management, crops that leave large amounts of residue can be grown safely year after year.

The main crop is cotton. Other suitable crops are soybeans, peanuts, grain sorghum, and winter small grain. Truck crops such as okra, green beans, potatoes, sweet corn, tomatoes, and melons are also suitable. Adapted pasture plants are bermudagrass, bahiagrass, annual lespedeza, and white clover. Capability unit IIs-1; woodland group 2o4.

Bowdre Series

The Bowdre series consists of somewhat poorly drained, undulating soils on higher lying parts of the slack-water areas. These soils formed in thin beds of clayey sediments over coarser sediments. The natural vegetation is hardwood trees.

In a representative profile the surface layer is very dark grayish-brown silty clay loam and silty clay about 9 inches thick. The subsoil is dark grayish-brown, mottled silty clay about 5 inches thick. The underlying material is mottled silt loam. The upper 28 inches of it is yellowish brown, and the silt loam below this is dark gray.

Bowdre soils are high in natural fertility. Content of organic matter is medium. Permeability is slow, and available water capacity is high. These soils respond well to fertilization. Tilth is difficult to maintain because of the high content of clay in the surface layer, and a seedbed is difficult to prepare. If these soils are plowed when wet, hard, persistent clods form. These soils shrink and crack as they dry, but they expand when wet and the cracks seal.

These soils are suited to most crops grown in the county. Nearly all of the acreage is cultivated.

Representative profile of Bowdre silty clay loam, undulating, in a moist, cultivated area in the SE¼SW¼NW¼ sec. 2, T. 10 N., R. 6 E.:

Ap—0 to 5 inches, very dark grayish-brown (10YR 3/2) silty clay loam; moderate, medium, angular blocky structure; firm; many fine roots; slightly acid; clear, smooth boundary.

A1—5 to 9 inches, very dark grayish-brown (10YR 3/2) silty clay; moderate, medium, angular blocky structure; firm; many fine roots; slightly acid; clear, smooth boundary.

B2—9 to 14 inches, dark grayish-brown (10YR 4/2) silty clay; common, medium, distinct, strong-brown (7.5YR 5/6) mottles; moderate, medium, angular blocky structure; firm; few fine roots; neutral; abrupt, wavy boundary.

IIC1—14 to 42 inches, yellowish-brown (10YR 5/6) silt loam; common fine, distinct, gray mottles; massive; friable; slightly acid; gradual, wavy boundary.

IIC2—42 to 62 inches, dark-gray (10YR 4/1) silt loam, common medium, distinct, dark yellowish-brown (10YR 4/4) mottles; massive; firm; common fine pores; slightly acid; gradual, wavy boundary.

IIC3—62 to 72 inches, dark-gray (10YR 4/1) silt loam; common medium, distinct, dark yellowish-brown (10YR 4/4) mottles; massive; friable; common fine pores; neutral.

The B horizon is very dark grayish brown or dark grayish brown to dark brown. Depth to the IIC1 horizon ranges from 14 to 20 inches. In some profiles the C horizon includes lenses, 2 to 3 inches thick, of widely contrasting textures ranging from loamy sand to silty clay. Reaction is slightly acid to mildly alkaline throughout the profile.

Bowdre soils are associated with Dubbs, Sharkey, and Tunica soils. They are more poorly drained and have finer textured A and B horizons than Dubbs soils. They are not so poorly drained, and formed in thinner beds of clayey sediments than Sharkey and Tunica soils.

BoU—Bowdre silty clay loam, undulating. This soil is in areas of alternating long, narrow swales and low ridges that rise 2 to 5 feet above the swales. The areas are mostly along the margin of broad flats. Slopes are less than 3 percent. Most areas are 10 to 40 acres in size. Included in mapping are small areas of level Bowdre soils and spots of Dubbs, Sharkey, and Tunica soils.

This soil is suited to farming, but excess water is a severe hazard. Water accumulates in the swales, and farming operations are delayed several days after a rain unless surface drains are installed. Land grading and smoothing can be done, but careful planning is needed for satisfactory results. Deep cuts in the ridges expose the more permeable underlying material, and fill material from the clayey upper layers at the higher elevations is placed in the depressions. This results in alternating narrow strips of loamy and clayey textures across the graded fields. Thus, a field may be more difficult to manage after grading than before. Under good management that includes adequate drainage, crops that leave large amounts of residue can be grown year after year.

The main crops are cotton and soybeans. Other suitable crops are alfalfa, grain sorghum, and winter small grain. Suitable pasture plants are bermudagrass, bahiagrass, tall fescue, and white clover. Capability unit IIIw-3; woodland group 2w5.

Brandon Series

The Brandon series consists of well-drained, gently sloping to moderately steep soils on uplands of Crowley Ridge. These soils formed in moderately thick deposits of windlaid sediments, and the underlying gravelly water-laid sediments. The natural vegetation is mixed shortleaf pine and hardwood trees.

In a representative profile the surface layer is dark grayish-brown silt loam about 2 inches thick. The subsurface layer is brown silt loam about 7 inches thick. The upper part of the subsoil is strong-brown silt loam about 5 inches thick, and the middle part is yellowish-red silty clay loam about 14 inches thick. The lower part of the subsoil and the underlying material are yellowish-red gravelly sandy clay loam.

Brandon soils are moderate in natural fertility. Content of organic matter is low. Permeability is moderate, and available water capacity is medium. These soils give fair response to fertilization. Tilth is easy to maintain.

These soils are poorly suited to unsuited for cultivated crops. Most areas are used for pasture and woodland.

Representative profile of Brandon silt loam, 3 to 12 percent slopes, in a moist wooded area in the NE¼NW¼SE¼ sec. 18, T. 10 N., R. 4 E.:

A1—0 to 2 inches, dark grayish-brown (10YR 4/2) silt loam; weak, fine, granular structure; friable; many fine and medium roots; very strongly acid; abrupt, smooth boundary.

A2—2 to 9 inches, brown (10YR 5/3) silt loam; moderate, fine, granular structure; friable; many fine and medium roots; very strongly acid; clear, wavy boundary.

B1—9 to 14 inches, strong-brown (7.5YR 5/8) silt loam; weak, fine, subangular blocky structure; friable; common fine and medium roots; very strongly acid; clear, wavy boundary.

B21t—14 to 28 inches, yellowish-red (5YR 4/6) silty clay loam; moderate, medium, subangular blocky structure; firm; few fine roots; thin patchy clay films on faces of peds; very strongly acid; clear, wavy boundary.

IIB22t—28 to 38 inches, yellowish-red (5YR 4/6) gravelly sandy clay loam; moderate, medium, subangular blocky structure; friable; sand grains coated and bridged; 15 percent of volume is rounded pebbles as much as 1½ inches in diameter; very strongly acid; clear, wavy boundary.

IIC—38 to 72 inches, yellowish-red (5YR 4/6) gravelly sandy clay loam; few pockets of pale-brown (10YR 6/3) loamy sand; weak, subangular blocky structure; friable; sand grains bridged with clay; about 40 percent, by volume, rounded pebbles as much as 1½ inches in diameter; very strongly acid.

The A1 horizon is dark gray to dark grayish brown, and the A2 horizon is dark grayish brown to brown. In cultivated areas there is an Ap horizon that is dark grayish brown to yellowish brown. The B1 horizon is absent in some profiles. It is dark-brown to yellowish-red silt loam or silty clay loam. The B21t horizon is yellowish-brown to red silty clay loam or silt loam. The IIB22t horizon is brown to red sandy loam to sandy clay loam that is gravelly or very gravelly. The IIC horizon has the same color range as the IIB22t horizon. Its texture ranges from sandy clay loam to loamy sand that is gravelly or very gravelly.

Brandon soils are associated with Loring, Memphis, and Saffell soils. They formed in moderately thick loess over gravelly, loamy material. Loring and Memphis soils formed in thick loess, and Saffell soils formed in predominantly gravelly, loamy water-laid material similar to the underlying material of Brandon soils.

BrD—Brandon silt loam, 3 to 12 percent slopes. This gently sloping to moderately sloping soil is on the top and the upper part of side slopes of Crowley Ridge. Individual areas range from 10 to 60 acres in size. This soil has the profile described as representative for the series (fig. 2). Included in mapping are spots of Loring and Saffell soils.

This soil is poorly suited to clean-tilled crops. Runoff is medium to rapid, and the hazard of erosion is very severe. Under good management, crops that leave large amounts of residue can be grown about half the time where this soil is gently sloping. Such management includes the growing of winter cover crops each year, terracing, and contour cultivation. Where this soil is moderately sloping, small grain and other drilled crops can be grown occasionally in a cropping system that includes close-growing cover most of the time. This soil is better suited to pasture or woodland than to crops.

A few fields are used to grow soybeans and corn. Suitable crops include winter small grains, peaches, and truck crops such as tomatoes and potatoes. Adapted pasture plants are bermudagrass, bahiagrass, tall fescue, white clover, and annual lespedeza. Capability unit IVe-1; woodland group 3o7.

BsE—Brandon-Saffell complex, 12 to 20 percent slopes. This moderately steep soil complex is on narrow ridge crests and sides of Crowley Ridge. The soils are so intermingled that it is impractical to map them separately. The Brandon soil is mostly on narrow ridge crests and interfluves, and the Saffell soil is mainly on side slopes. Mapped areas range from 40 to 100 acres in size. The profile of the Brandon soil in this unit is similar to the one described as representative of the Brandon series. The Saffell soil has the profile described as representative of the Saffell series. The Brandon soil makes up about 50 percent of the complex and the Saffell soil, about 40 percent. Loring, Memphis, and a soil similar to the Brandon soil make up the remaining 10 percent. The soil similar to the Brandon soil has a slightly thinner silty mantle, but it is similar in behavior to the Brandon soil. Included in mapping are small areas where slopes are 8 to 12 percent and others where slopes are 20 to 45 percent.

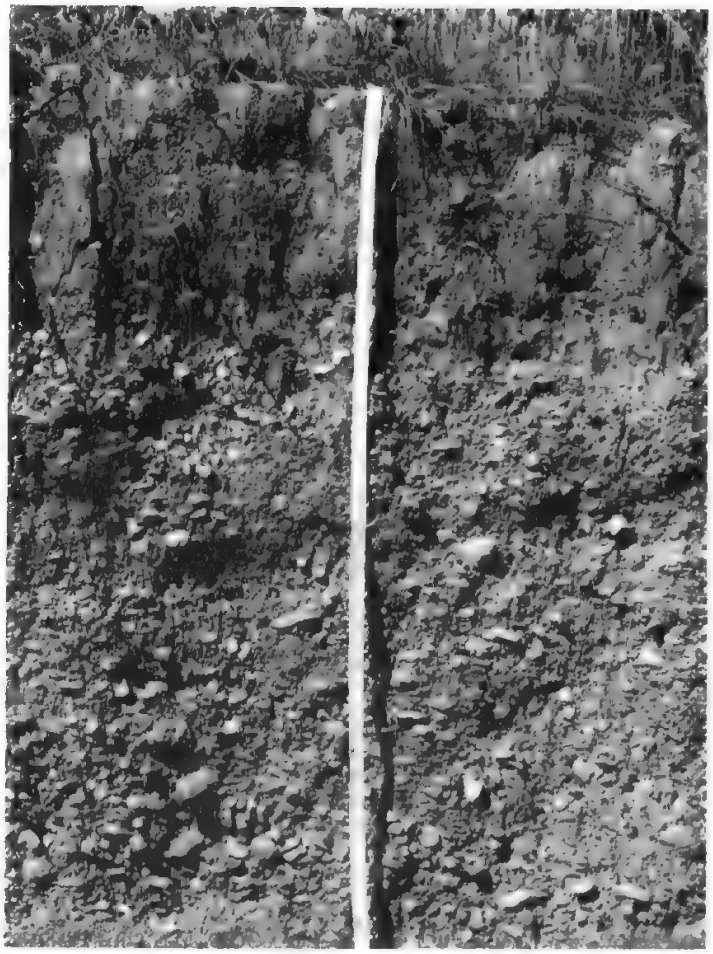

Figure 2.—Profile of Brandon silt loam, 3 to 12 percent slopes, that formed where wind-deposited sediments overlie water-deposited gravelly sediments.

The soils of this unit are not suited to cultivation. They are suited to pasture or woodland (fig. 3). Runoff is rapid, and the hazard of erosion is severe. Capability unit VIe-1; woodland group 3o7.

Calhoun Series

The Calhoun series consists of poorly drained, level soils on broad upland flats. These soils formed in deposits of thick loess. Natural vegetation is water-tolerant hardwood trees.

In a representative profile the surface layer is dark grayish-brown silt loam about 5 inches thick. The subsurface layer is grayish-brown and gray, mottled silt loam about 18 inches thick. The upper part of the subsoil is light brownish-gray, mottled silt loam about 5 inches thick. This layer has tongues of gray silt loam extending downward through it. The middle part of the subsoil is grayish-brown silty clay loam streaked with light-gray silt. It is about 22 inches

Figure 3.—Area of Saffell gravelly fine sandy loam in an area of Brandon-Saffell complex, 12 to 20 percent slopes. Although this soil is a good source of gravel, mined areas are difficult to reclaim because of droughtiness and low fertility.

thick. The lower part is mottled light brownish-gray, gray, and yellowish-brown silty clay loam that extends to a depth of 72 inches or more.

Calhoun soils are moderate in natural fertility. Content of organic matter is low. Permeability is slow, and available water capacity is high. These soils respond well to fertilization. Tilth is easy to maintain. A plowpan has formed beneath plow depth in places. This restricts root penetration and movement of water through the soil.

Calhoun soils are mapped only in complex with Foley soils.

Representative profile of Calhoun silt loam, in a moist, cultivated area of Foley-Calhoun complex in the SW¼SE¼SW¼ sec. 18, T. 12 N., R. 2 E.:

Ap—0 to 5 inches, dark grayish-brown (10YR 4/2) silt loam; few fine, dark-brown mottles in lower part; weak, medium, granular structure; friable; many fine roots; medium acid; abrupt, smooth boundary.

A21g—5 to 13 inches, grayish-brown (10YR 5/2) silt loam; few fine, distinct, dark yellowish-brown mottles; massive; friable; many fine roots; few fine, dark concretions; medium acid; clear, wavy boundary.

A22g—13 to 23 inches, gray (10YR 6/1) silt loam; few fine, distinct, yellowish-brown mottles; massive; friable; few fine roots; few fine, dark concretions; strongly acid; clear, irregular boundary.

B21tg—23 to 28 inches, light brownish-gray (10YR 6/2) silt loam; few fine, distinct dark-brown mottles; weak, medium, subangular blocky structure; friable; common patchy clay films on faces of peds; common gray (10YR 6/1) silt tongues 1 to 2 inches in diameter; few fine, dark concretions; very strongly acid; clear, wavy boundary.

B22tg—28 to 50 inches, grayish-brown (10YR 5/2) silty clay loam; weak, medium, subangular blocky structure; firm; light-gray (10YR 7/2) silt coatings and common patchy clay films on faces of peds; many fine, dark concretions; very strongly acid; gradual, wavy boundary.

B3g—50 to 72 inches, mottled light brownish-gray (10YR 6/2), gray (10YR 5/1), and yellowish-brown (10YR 5/8) silty clay loam; weak, medium, subangular blocky structure; firm; few fine, dark concretions; strongly acid.

The A1 or Ap horizon ranges from dark grayish brown to brown, and the A2g horizon ranges from grayish brown to light gray. The A horizon is medium acid to very strongly acid. The B2tg horizon is gray, light brownish-gray, or grayish-brown silty clay loam or silt loam. The B21tg horizon is strongly acid or very strongly acid, the B22tg horizon is medium acid to very strongly acid, and the B3g horizon is strongly acid to moderately alkaline.

Calhoun soils are associated with Amagon, Calloway, Foley, Henry, and Hillemann soils. They have tongues of the A horizon into the B horizon that are lacking in Amagon soils, and they are more poorly drained than Calloway and Hillemann soils. Calhoun soils lack the high content of sodium in the middle part of the B horizon that Foley and Hillemann soils have, and they lack the fragipan of the Calloway and Henry soils.

Calloway Series

The Calloway series consists of somewhat poorly drained, level and nearly level soils on uplands. These soils formed in thick deposits of loess. Natural vegetation is hardwood trees.

In a representative profile the surface layer is dark grayish-brown and grayish-brown silt loam about 8 inches thick. The upper part of the subsoil is yellowish-brown and grayish-brown, mottled silt loam about 24 inches thick. The lower part is a brittle fragipan of mottled, light brownish-gray silt loam and silty clay loam about 36 inches thick. The underlying material is mottled silty clay loam.

Calloway soils are moderate in natural fertility. Content of organic matter is low. Permeability is slow, and available water capacity is medium. These soils respond well to fertilization. Tilth is easy to maintain. A plowpan has formed beneath plow depth in places.

These soils are suited to most crops commonly grown in the county. Nearly all of the acreage is cultivated.

Representative profile of Calloway silt loam, 0 to 1 percent slopes, in a moist, cultivated area in the NE¼NE¼-SE¼ sec. 35, T. 12 N., R. 2 E.:

Ap1—0 to 5 inches, dark grayish-brown (10YR 4/2) silt loam; weak, medium, granular structure; friable; many fine roots; slightly acid; abrupt, smooth boundary.

Ap2—5 to 8 inches, grayish-brown (10YR 5/2) silt loam; few medium, distinct, dark-brown, (10YR 3/3) and yellowish-brown (10YR 5/6) mottles; weak, medium, granular structure; friable; many fine roots; few fine, dark concretions; slightly acid; clear, wavy boundary.

B2—8 to 19 inches, yellowish-brown (10YR 5/6) silt loam; many medium, distinct, light brownish-gray (10YR 6/2) mottles; weak, medium, subangular blocky structure; friable; few fine roots; common pores; strongly acid; clear, wavy boundary.

A'2—19 to 32 inches, grayish-brown (10YR 5/2) silt loam; common medium, distinct, yellowish-brown (10YR 5/8) mottles; moderate, medium, subangular blocky structure; friable; somewhat brittle; few fine roots; few pores; strongly acid; gradual, irregular boundary.

B'x1—32 to 50 inches, light brownish-gray (10YR 6/2) silty clay loam; common medium, distinct, yellowish-brown (10YR 5/6) and dark yellowish-brown (10YR 4/4) mottles; moderate, coarse, prismatic structure parting to moderate, medium, subangular blocky; firm, brittle; patchy clay films on faces of peds and in pores; gray (10YR 6/1), friable tongues of silt loam between prisms; common fine pores and vesicular voids; strongly acid; gradual, wavy boundary.

B'x2—50 to 68 inches, light brownish-gray (10YR 6/2) silt loam; common medium, distinct, yellowish-brown (10YR 5/8) and brown (10YR 5/3) mottles; moderate, coarse, prismatic structure parting to weak, medium, subangular blocky; firm; few patchy clay films on faces of peds; very strongly acid; gradual, wavy boundary.

C—68 to 83 inches, mottled yellowish-brown (10YR 5/6), gray (10YR 6/1), and yellowish-red (5YR 5/6) silty clay loam; moderate, medium, subangular blocky structure; firm; few black streaks on vertical ped faces; strongly acid.

The Ap horizon ranges from dark grayish brown to brown. The B2 horizon ranges from dark grayish brown to yellowish brown. The A'2 horizon ranges from grayish brown to light gray. The B'x horizon ranges from grayish-brown to mottled shades of gray, brown, and yellow silt loam or silty clay loam. Depth to the B'x horizon ranges from 20 to 36 inches. Except where the soil has been limed or irrigated with water high in bases, it is medium acid or strongly acid in the A horizon and down through the B'x1 horizon. It is strongly acid to mildly alkaline below.

Calloway soils are chiefly associated with Loring, Grenada, Henry, Calhoun, and Foley soils. They are more poorly drained than Loring and Grenada soils and better drained than Henry and Calhoun soils. Calloway soils have a fragipan which Calhoun soils lack, and do not have the high content of sodium in the subsoil that Foley soils have.

CaA—Calloway silt loam, 0 to 1 percent slopes. This somewhat poorly drained level soil is on uplands. Individual areas range from 10 to 100 acres. This soil has the profile described as representative of the series. Included in mapping were spots of Grenada, Calhoun, Henry, Hillemann, and Foley soils.

This soil is suited to farming, but excess water is a moderate hazard. Farming operations are delayed several days after a rain unless surface drains are installed. Under good management that includes adequate drainage, crops that leave large amounts of residue can be safely grown year after year.

The main crops are soybeans, rice, and cotton. Grain sorghum is a suitable crop, and winter small grains can be grown when surface drainage is adequate. Adapted pasture plants are bermudagrass, tall fescue, and white clover. Capability unit IIw-1; woodland group 3w8.

CaB—Calloway silt loam, 1 to 3 percent slopes. This somewhat poorly drained, nearly level soil is on uplands. Individual areas range from 20 to 80 acres. This soil has a profile similar to the one described as representative for the series, but erosion has removed part of the original surface layer. Included in mapping are spots of Loring, Grenada, Calhoun, Foley, and Henry soils.

This soil is suited to farming, but runoff is medium and erosion is a moderate hazard on long slopes. Where this soil is less sloping, excess water is a moderate hazard. Under good management that includes contour cultivation and terracing on long slopes and surface drains where the soil is less sloping, crops that leave large amounts of residue can be grown year after year. Small grains and other drilled crops may be grown without attention to row direction.

The main crops are cotton and soybeans. Other suitable crops are corn, grain sorghum, rice, and winter small grain. Okra is a suitable truck crop. Adapted pasture plants are bermudagrass, tall fescue, and white clover. Capability unit IIe-1; woodland group 3w8.

Collins Series

The Collins series consists of moderately well drained, level soils on flood plains of local streams. These soils formed in loamy alluvium washed mainly from loess uplands. Natural vegetation is hardwood trees.

In a representative profile the surface layer is brown silt loam about 7 inches thick. The upper part of the underlying material is brown silt loam about 5 inches thick. The middle part is pale-brown, mottled silt loam about 12 inches thick. The lower part is shades of brown and gray or gray, mottled silt loam that extends to a depth of 72 inches or more.

The Collins soils are moderate in natural fertility. Content of organic matter is low. Permeability is moderate, and available water capacity is high. These soils respond well to fertilization. Tilth is easy to maintain. A plowpan has formed beneath the plow layer in places. This restricts root penetration and movement of water through the soil. These soils are suited to most crops grown in the county. Nearly all of the acreage is cultivated.

Representative profile of Collins silt loam, occasionally flooded, in a moist, cultivated area in the SW¼SE¼NE¼ sec. 26, T. 10 N., R. 3 E.:

Ap—0 to 7 inches, brown (10YR 4/3) silt loam; weak, medium, granular structure; friable; many fine roots; medium acid; abrupt, smooth boundary.

C1—7 to 12 inches, brown (10YR 4/3) silt loam; massive; friable; few fine roots; many bedding planes; strongly acid; clear, smooth boundary.

C2—12 to 24 inches, pale-brown (10YR 6/3) silt loam; few fine, dis-

tinct, dark yellowish-brown mottles; massive; friable; few fine roots; few fine pores; common fine concretions; common bedding planes; strongly acid; clear, smooth boundary.

C3—24 to 32 inches, light brownish-gray (10YR 6/2) silt loam; common medium, distinct, dark yellowish-brown (10YR 3/4) mottles; massive; friable; few fine concretions; strongly acid; gradual, smooth boundary.

C4—32 to 48 inches, mottled grayish-brown (10YR 5/2), light brownish-gray (10YR 6/2), and dark yellowish-brown (10YR 4/4) silt loam; massive; friable; few fine roots; few fine concretions; strongly acid; clear, wavy boundary.

C5—48 to 54 inches, light brownish-gray (10YR 6/2) silt loam; common fine, distinct, dark yellowish-brown (10YR 4/4) mottles; massive; friable; few fine roots; few fine concretions; medium acid; clear, wavy boundary.

C6—54 to 62 inches, gray (10YR 6/1) silt loam; common fine and medium, yellowish-brown (10YR 5/6) and dark yellowish-brown (10YR 4/4) mottles; massive; friable; few fine roots; few fine concretions; slightly acid; clear, wavy boundary.

C7—62 to 72 inches, gray (10YR 6/1) silt loam; many fine and medium, prominent, strong-brown (7.5YR 5/6) and faint, light-gray (10YR 7/1) mottles; massive; friable; few fine concretions; neutral.

The Ap horizon is brown, dark brown, dark grayish brown, or dark yellowish brown. The C1 and C2 horizons are pale brown or brown. The horizons below are gray to light brownish gray. Reaction of the Ap horizon ranges from medium acid to very strongly acid. The C1, C2, C3, and C4 horizons are strongly acid or very strongly acid, and horizons below are strongly acid to neutral.

Collins soils are chiefly associated with Falaya soils. They are not as poorly drained, and they lack the mottles in the upper part of the C horizon of Falaya soils.

Co—Collins silt loam, occasionally flooded. This level soil is on flood plains. Individual areas range from about 10 to 80 acres in size. Slopes are less than 1 percent. Included in mapping are spots of Falaya soils.

This soil is suited to farming, but excess water is a moderate hazard. Farming operations are commonly delayed several days after a rain unless surface drains are installed. Under good management that includes adequate drainage, crops that leave large amounts of residue can be safely grown year after year. Occasional flooding in winter and spring may damage cool season crops.

The main crops are cotton and soybeans. Other suitable crops are grain sorghum and winter small grain. Adapted pasture plants include bermudagrass, bahiagrass, tall fescue, and white clover. Capability unit IIw-2; woodland group 1o7.

Convent Series

The Convent series consists of somewhat poorly drained, level soils on young natural levees bordering stream channels. These soils formed in stratified beds of loamy sediments. Natural vegetation is hardwood trees.

In a representative profile the surface layer is brown silt loam about 9 inches thick. The material beneath is stratified layers of dark grayish brown and grayish brown, mottled silt loam and very fine sandy loam.

Convent soils are high in natural fertility. Content of organic matter is medium to low. Permeability is moderate, and available water capacity is high. These soils respond well to fertilization. Tilth is easy to maintain. A plowpan has formed beneath the plow layer in places. This restricts root penetration and movement of water through the soil.

These soils are suited to most crops commonly grown in the county. Nearly all of the acreage is cultivated.

Representative profile of Convent silt loam in a moist, cultivated area in the NE¼NW¼SW¼ sec. 26, T. 12 N., R. 7 E.:

Ap—0 to 9 inches, brown (10YR 4/3) silt loam; weak, medium, granular structure; very friable; common fine roots; slightly acid; abrupt, smooth boundary.

C1—9 to 16 inches, dark grayish-brown (10YR 4/2) silt loam; common medium, distinct, dark yellowish-brown (10YR 4/4) mottles; weak, medium, platy structure; friable, common fine roots; neutral; clear, smooth boundary.

C2—16 to 31 inches, grayish-brown (10YR 5/2) silt loam; common medium, distinct, dark yellowish-brown (10YR 4/4) mottles; massive, parting to weak, medium, and fine subangular blocky fragments; friable; lense of dark grayish-brown silty clay loam between depths of 25 and 26 inches; neutral; gradual, smooth boundary.

C3—31 to 48 inches, grayish-brown (10YR 5/2) very fine sandy loam; many medium, distinct, dark yellowish-brown (10YR 4/4) mottles; massive, parting to weak, medium, and fine subangular blocky fragments; friable; lenses of silt loam between depths of 39 and 40 inches; mildly alkaline; clear, wavy boundary.

C4—48 to 58 inches, grayish-brown (10YR 5/2) silt loam; few medium, distinct, dark-brown (10YR 3/3) and gray (10YR 6/1) mottles; massive; few bedding planes; friable; few pockets and thin lenses of very pale brown (10YR 7/4) fine sandy loam; mildly alkaline; clear, wavy boundary.

C5—58 to 69 inches, grayish-brown (10YR 5/2) very fine sandy loam; few medium, distinct, dark-brown (10YR 3/3) and light-gray (10YR 7/2) mottles; massive; friable; lenses of silt loam between depths of 65 and 66 inches; few fine, dark concretions; mildly alkaline; clear, wavy boundary.

C6—69 to 83 inches, grayish-brown (10YR 5/2) silt loam; few medium, distinct, dark yellowish-brown (10YR 4/4) mottles and horizontal streaks; lenses of silt loam between depths of 69 and 71 inches; few fine, dark concretions; mildly alkaline.

The Ap horizon is dark grayish brown to brown. Subhorizons of the C horizon are grayish-brown or dark grayish-brown stratified layers of silt loam and very fine sandy loam without regular sequence. Reaction ranges from slightly acid to mildly alkaline throughout the profile.

Convent soils are chiefly associated with Sharkey and Mhoon soils. They are better drained and contain less clay than these soils.

Cu—Convent silt loam. This level soil is on young natural levees bordering stream channels. Individual areas range from about 20 to 200 acres. Slopes are less than 1 percent. Included in mapping are spots of Sharkey and Mhoon soils.

This soil is well suited to farming. Excess surface water in early spring may delay planting. Under good management that includes adequate drainage, crops that leave large amounts of residue can be safely grown year after year.

The main crops are soybeans and cotton. Other suitable crops are corn, grain sorghum, alfalfa, and winter small grain. Okra, green beans, and tomatoes are suitable truck crops. Adapted pasture plants are bermudagrass, tall fescue, and white clover. Capability unit IIw-2; woodland group 1w5.

Dubbs Series

The Dubbs series consists of well-drained, undulating soils on older natural levees along bayous and abandoned river channels. These soils formed in stratified beds of loamy sediments. Natural vegetation is hardwood trees.

In a representative profile the surface layer is dark grayish-brown silt loam about 7 inches thick. The upper 4 inches of the subsoil is dark grayish-brown silt loam. The lower part, extending to a depth of about 37 inches, is yellowish-brown silty clay loam and is mottled light brownish gray in the lower part. The underlying material is stratified layers of mottled light yellowish-brown, yellowish-brown, and dark yellowish-brown fine sandy loam.

Dubbs soils are high in natural fertility. Content of organic matter is medium to low. Permeability is moderate,

and available water capacity is high. These soils respond well to fertilization. Tilth is easy to maintain. A plowpan has formed in places. This restricts root penetration and movement of water through the soil material.

These soils are suited to most crops commonly grown in the county. Nearly all of the acreage is cultivated.

Representative profile of Dubbs silt loam, undulating, in a moist, cultivated area in the NW¼SE¼SW¼ sec. 1, T. 12 N., R. 5 E.:

Ap—0 to 7 inches, dark grayish-brown (10YR 4/2) silt loam; weak, fine, granular structure; friable; many fine roots; strongly acid; abrupt, smooth boundary.

B1—7 to 11 inches, dark grayish-brown (10YR 4/2) silt loam; weak, medium, subangular blocky structure; friable; common fine roots; few pores; medium acid; clear, smooth boundary.

B21t—11 to 23 inches, yellowish-brown (10YR 5/4) silty clay loam; moderate, medium, subangular blocky structure; firm; common patchy clay films on faces of peds and in pores; common fine roots; common pores; medium acid; clear, smooth boundary.

B22t—23 to 37 inches, yellowish-brown (10YR 5/4) silty clay loam; common fine, distinct, light brownish-gray mottles; weak, medium, subangular blocky structure; firm; few patchy clay films on faces of peds and in pores; few fine roots; few pores; strongly acid; gradual, smooth boundary.

C1—37 to 48 inches, light yellowish-brown (10YR 6/4) fine sandy loam; common fine and medium, distinct, grayish-brown (10YR 5/2) mottles; massive; friable; few fine, dark concretions; strongly acid; clear, wavy boundary.

C2—48 to 56 inches, yellowish-brown (10YR 5/6) fine sandy loam; few medium, faint, pale-brown (10YR 6/3) mottles; massive; friable; strongly acid; clear, wavy boundary.

C3—56 to 64 inches, dark yellowish-brown (10YR 4/4) fine sandy loam; common medium, distinct, gray (10YR 6/1) and few fine, distinct yellowish-brown mottles; massive; friable; few fine, dark concretions; strongly acid; clear, wavy boundary.

C4—64 to 82 inches, dark yellowish-brown (10YR 4/4) fine sandy loam; few medium, faint, yellowish-brown (10YR 5/4) mottles; massive; friable; medium acid.

The Ap horizon ranges from dark grayish brown to brown. The B1 horizon ranges from dark grayish brown to yellowish brown. The C horizon is silt loam, fine sandy loam, or loamy fine sand. Reaction ranges from very strongly acid to medium acid throughout the profile.

Dubbs soils are chiefly associated with Dundee, Amagon, and Beulah soils. They are browner and better drained than Dundee and Amagon soils. They have a finer textured B horizon than Beulah soils.

DbU—Dubbs silt loam, undulating. This soil is in areas of alternating long, narrow swales and low ridges that rise 2 to 5 feet above the swales. Slopes are predominantly less than 2 percent. The areas are mostly on the tops and side slopes of natural levees. Mapped areas range from 10 to 60 acres. Included in mapping are a few narrow escarpments and spots of Amagon, Beulah, and Dundee soils.

This soil is well suited to farming. It warms early in the spring and can be planted early. Excess water remains in some swales for a short time after a rain and for longer periods on the included spots of Amagon and Dundee soils. Under good management that includes cross-slope tillage, crops that leave large amounts of residue can be grown year after year.

The main crops are cotton and soybeans. Other suitable crops are corn, grain sorghum, peanuts, winter small grain, and truck crops such as okra, green beans, potatoes, sweet corn, tomatoes, strawberries, and melons. Suitable pasture plants are bermudagrass and white clover. Capability unit IIe-2; woodland group 2o4.

Dundee Series

The Dundee series consists of somewhat poorly drained, level to nearly level soils on the lower parts of the older natural levees along bayous and abandoned river channels. These soils formed in stratified beds of loamy sediments. Natural vegetation is hardwood trees.

In a representative profile the surface layer is dark grayish-brown silt loam about 6 inches thick. The subsoil is about 33 inches thick. In sequence downward, the upper 5 inches is dark grayish-brown, mottled silt loam; the next 7 inches is light brownish-gray, mottled silt loam; the next 5 inches, is gray, mottled silt loam; the next 12 inches is light brownish-gray, mottled silty clay loam; and the lower 4 inches is light brownish-gray, mottled silt loam. The underlying material is brown, mottled sandy loam and loamy fine sand.

Dundee soils are high in natural fertility. Content of organic matter is medium to low. Permeability is moderately slow, and available water capacity is high. These soils respond well to fertilization. Tilth is easy to maintain. A plowpan has formed in places. This restricts root penetration and movement of water through the soil.

These soils are suited to most crops commonly grown in the county. Nearly all of the acreage is cultivated.

Representative profile of Dundee silt loam, 0 to 2 percent slopes, in a moist, cultivated area in the SW¼NE¼NW¼ sec. 12, T. 12 N., R. 5 E.:

Ap—0 to 6 inches, dark grayish-brown (10YR 4/2) silt loam; weak, fine, granular structure; friable; many fine roots; medium acid; abrupt, smooth boundary.

B1—6 to 11 inches, dark grayish-brown (10YR 4/2) silt loam; few medium and fine, distinct, dark yellowish-brown (10YR 4/4) mottles; weak, medium, subangular blocky structure; friable; many fine roots; medium acid; clear, smooth boundary.

B21t—11 to 18 inches, light brownish-gray (10YR 6/2) silt loam; many medium, distinct, dark yellowish-brown (10YR 4/4) mottles; weak, medium, subangular blocky structure; firm; patchy clay films on faces of peds; few fine roots; strongly acid; clear, smooth boundary.

B22t—18 to 23 inches, gray (10YR 5/1) silt loam; common medium, distinct, dark yellowish-brown (10YR 4/4) and yellowish-brown (10YR 5/6) mottles; moderate, medium, subangular blocky structure; friable; continuous clay films on faces of most peds; few fine roots; medium acid; clear, smooth boundary.

B23t—23 to 35 inches, light brownish-gray (10YR 6/2) silty clay loam; many medium, distinct, yellowish-brown (10YR 5/8) mottles; moderate, medium, subangular blocky structure; firm; continuous clay films on faces of most peds; few fine roots; few fine, dark concretions; very strongly acid; clear, smooth boundary.

B3—35 to 39 inches, light brownish-gray (10YR 6/2) silt loam; common medium, distinct, dark yellowish-brown (10YR 4/4) and brown (10YR 5/3) mottles; weak, medium, subangular blocky structure; friable; strongly acid; gradual, smooth boundary.

IIC—39 to 45 inches, brown (10YR 4/3) sandy loam; few medium, distinct, light brownish-gray (10YR 6/2) mottles; massive; friable; strongly acid; clear, wavy boundary.

IIIC—45 to 65 inches, brown (10YR 5/3) loamy fine sand; few medium, distinct, gray (10YR 5/1) mottles; single grained; loose; strongly acid.

The Ap horizon is dark grayish brown or grayish brown. The B1 horizon is grayish brown to yellowish brown and is absent in some profiles. The B2 horizon ranges from silt loam to clay loam and is light brownish gray or grayish brown, although one or more of the lower subhorizons is gray in many profiles. The C horizon ranges from silt loam to loamy fine sand. Reaction ranges from medium acid to very strongly acid throughout the profile.

Dundee soils are associated with Dubbs and Amagon soils. They are grayer and more poorly drained than Dubbs soils and browner and better drained than Amagon soils.

DdA—Dundee silt loam, 0 to 2 percent slopes. This level to nearly level soil is on the lower parts of natural levees. Mapped areas range from about 10 to 160 acres. Included in mapping are spots of Dubbs and Amagon soils and a few small, frequently flooded areas of Dundee soils within the St. Francis River Floodway.

This soil is well suited to farming, but excess water is a

moderate hazard. Farming operations are commonly delayed several days after a rain unless surface drains are installed. Under good management that includes adequate drainage, crops that leave large amounts of residue can be grown year after year.

The main crops are cotton and soybeans. Other suitable crops are corn, peanuts, grain sorghum, winter small grain, and truck crops such as okra, green beans, potatoes, sweet corn, tomatoes, strawberries, and melons. Suitable pasture plants are bermudagrass, tall fescue, and white clover. Capability unit IIw-3; woodland group 2w5.

Earle Series

The Earle series consists of somewhat poorly drained, level and undulating soils at higher elevations in the slack-water areas. These soils formed in thin beds of clayey sediments over loamy sediments. Natural vegetation is water-tolerant hardwood trees.

In a representative profile the surface layer is about 8 inches thick. The upper 4 inches is dark grayish-brown silty clay loam, and the lower 4 inches is dark-gray, mottled silty clay. The subsoil is about 21 inches thick. The upper 10 inches is grayish-brown, mottled clay, and the lower 11 inches is gray, mottled silty clay. The underlying material is mottled, loamy sediments that are stratified in irregular sequence.

Earle soils are moderate to high in natural fertility. Content of organic matter is medium to low. Permeability is very slow, and available water capacity is high. These soils respond well to fertilization. Tilth is difficult to maintain because of the high content of clay in the plow layer and a seedbed is difficult to prepare. If these soils are plowed when wet, hard, persistent clods form. These soils shrink and crack as they dry. When wet, they expand and the cracks seal.

These soils are suited to most crops grown in the county. Nearly all of the acreage is cultivated.

Representative profile of Earle silty clay loam, in a moist, cultivated area in the NW¼NW¼SW¼ sec. 30, T. 10 N., R 7 E.:

Ap1—0 to 4 inches, dark grayish-brown (10YR 4/2) silty clay loam; weak, medium, blocky structure parting to moderate, medium, granular; firm, plastic; few fine roots; strongly acid; abrupt, smooth boundary.

Ap2—4 to 8 inches, dark-gray (10YR 4/1) silty clay; common medium, distinct, yellowish-brown (10YR 5/6) mottles; moderate, medium, subangular blocky structure; very firm, plastic; few fine roots; strongly acid; clear, wavy boundary.

B21g—8 to 18 inches, grayish-brown (10YR 5/2) clay; common medium, distinct, brownish-yellow (10YR 6/6) mottles; moderate, medium, subangular blocky structure; very firm, plastic; few fine roots; very strongly acid; clear, wavy boundary.

B22g—18 to 29 inches, gray (10YR 6/1) silty clay; common medium, distinct, yellowish-brown (10YR 5/8) mottles; moderate, medium, subangular blocky structure; very firm, plastic; few fine roots; very strongly acid; clear, wavy boundary.

IIC1g—29 to 37 inches, gray (10YR 6/1) silt loam; common medium, prominent, reddish-yellow (7.5YR 6/8) mottles; massive; friable; strongly acid; clear, wavy boundary.

IIC2g—37 to 45 inches, gray (10YR 6/1) loam; common medium, prominent, reddish-yellow (7.5YR 6/8) mottles; massive; friable; strongly acid; clear, wavy boundary.

IIC3—45 to 58 inches, light brownish-gray (10YR 6/2) silt loam; common medium, distinct, yellowish-brown (10YR 5/8) mottles; massive; friable; few fine, dark concretions; strongly acid; clear, wavy boundary.

IIC4—58 to 72 inches, grayish-brown (10YR 5/2) silt loam; common medium, prominent, strong-brown (7.5YR 5/6) mottles; massive; friable; few fine dark concretions; slightly acid; clear, wavy boundary.

IIC5—72 to 80 inches, pale-brown (10YR 6/3) fine sandy loam; common medium, distinct, yellowish-brown (10YR 5/6) mottles; massive; friable; slightly acid.

The Ap horizon is very dark grayish brown to gray. The B horizon ranges from dark gray to gray or light brownish gray. The C horizon ranges from gray to pale brown. Depth to the C horizon is 20 to 36 inches. The A and B horizons are strongly acid or very strongly acid. Reaction is very strongly acid to slightly acid below the B horizon.

Earle soils are chiefly associated with Alligator soils. They formed in thinner beds of clayey sediments than those in which the Alligator soils formed.

Ec—Earle silty clay loam. This soil is on slack-water flats broken by undulating areas. The undulating areas have alternating long, narrow swales and low ridges that rise 1 to 3 feet above the swales. Slopes range from 0 to 2 percent. Mapped areas are generally 10 to 80 acres. Included in mapping are spots of Alligator soils.

This soil is suited to farming, but excess water is a severe hazard. Farming operations are delayed several days after a rain unless surface drains are installed. Under good management that includes adequate drainage, crops that leave large amounts of residue can be grown year after year.

The main crops are soybeans and cotton. Grain sorghum is a suitable crop, and winter small grains can be grown where surface drainage is adequate. Suitable pasture plants are bermudagrass, tall fescue, and white clover. Capability unit IIIw-1; woodland group 2w6.

Falaya Series

The Falaya series consists of somewhat poorly drained, level soils on flood plains of local streams. These soils formed in loamy alluvium washed from older soils that formed in loess. Natural vegetation is water-tolerant hardwoods.

In a representative profile the surface layer is brown silt loam about 7 inches thick. The upper part of the underlying material is pale-brown and grayish-brown, mottled silt loam about 28 inches thick. The lower part is a buried soil of predominantly grayish, mottled silt loam.

Falaya soils are moderate in natural fertility. Content of organic matter is low. Permeability is moderate, and available water capacity is high. These soils respond well to fertilization. Tilth is easy to maintain. A plowpan has formed beneath the plow layer in places. This restricts root penetration and movement of water through the soil. These soils are suited to most crops grown in the county. Nearly all of the acreage is cultivated.

Representative profile of Falaya silt loam, occasionally flooded, in a moist, cultivated area in the NW¼NW¼SE¼ sec. 34, T. 12 N., R. 4 E.:

Ap—0 to 7 inches, brown (10YR 4/3) silt loam; weak, medium, granular structure; friable; few fine roots; strongly acid; abrupt, smooth boundary.

C1—7 to 20 inches, pale-brown (10YR 6/3) silt loam; common medium, faint, dark yellowish-brown (10YR 4/4) mottles; weak, medium, subangular blocky structure; friable; few fine roots; few pores; few fine, dark concretions; strongly acid; clear, smooth boundary.

C2—20 to 35 inches, grayish-brown (10YR 5/2) silt loam; common medium, distinct, dark yellowish-brown (10YR 4/4) mottles; weak, medium, subangular blocky structure; friable; few fine roots; few pores; common fine, dark concretions; strongly acid; clear, smooth boundary.

Ab—35 to 43 inches, light-gray (2.5Y 7/2) silt loam; common medium, distinct, yellowish-brown (10YR 5/6) mottles; weak, medium, platy structure, parting to subangular blocky; friable; few fine roots; common fine, dark concretions; strongly acid; clear, wavy boundary.

Bb21g—43 to 55 inches, light brownish-gray (2.5YR 6/2) silt loam; common medium, distinct, yellowish-brown (10YR 5/4) mottles; weak, medium, subangular blocky structure; friable; few root channels filled with gray (10YR 5/1) silt; common fine, dark concretions; strongly acid; clear, wavy boundary.

Bb22g—55 to 69 inches, light-gray (2.5Y 7/2) silt loam; common medium and coarse, distinct pale-brown (10YR 6/3) and few medium, distinct, yellowish-brown (10YR 5/8) mottles; weak, medium, prismatic structure, parting to weak, medium, subangular blocky; friable; common fine, dark concretions; strongly acid; clear, wavy boundary.

Bb23—69 to 85 inches, yellowish-brown (10YR 5/4) silt loam; common medium, faint, dark yellowish-brown (10YR 4/4) and few medium, distinct, very pale-brown (10YR 7/3) mottles; weak, medium, subangular blocky structure; strongly acid.

The Ap horizon ranges from brown to dark grayish brown, and the C1 horizon ranges from grayish brown to pale brown. The Ab horizon ranges from dark gray to light gray, and the Bb23 horizon ranges from yellowish brown to light brownish gray. Reaction is very strongly acid or strongly acid throughout the profile.

Falaya soils are chiefly associated with Collins soils. They are more poorly drained and are grayer in the C1 and C2 horizons than Collins soils.

Fa—Falaya silt loam, occasionally flooded. This level soil is on flood plains. Individual areas range from about 10 to 100 acres in size. Slopes are less than 1 percent. Included in mapping are spots of Collins soils.

This soil is suited to farming, but excess water is a moderate hazard. Farming operations are commonly delayed several days following a rain unless surface drains are installed. Under good management that includes adequate drainage, crops that leave large amounts of residue can be safely grown year after year, although cool season crops and pasture plants are damaged some years by flooding.

The main crops are cotton and soybeans. Other suitable crops are grain sorghum and winter small grain. Adapted pasture plants are bermudagrass, tall fescue, and white clover. Capability unit IIw–2; woodland group 1w8.

Foley Series

The Foley series consists of poorly drained, level soils on upland flats. These soils formed in deposits of thick loess. Natural vegetation is water-tolerant hardwood trees.

In a representative profile the surface layer is dark grayish-brown silt loam about 4 inches thick. The subsurface layer is pale-brown, mottled silt loam about 7 inches thick. The subsoil extends to a depth of 72 inches or more. In sequence downward, the upper 5 inches is light brownish-gray, mottled silt loam; the next 7 inches is light brownish-gray, mottled silty clay loam; the next 20 inches is grayish-brown, mottled silty clay loam; the next 17 inches is gray, mottled silty clay loam; and below this is gray, mottled silt loam.

Foley soils are moderate in natural fertility. Content of organic matter is low. Permeability is slow, and available water capacity is medium. These soils respond well to fertilization. Tilth is easy to maintain. Because of the high content of sodium and magnesium in the lower part of the subsoil, the effective rooting depth is limited. These soils are suited to most crops commonly grown in the county. Nearly all of the acreage is cultivated.

Representative profile of Foley silt loam, in a moist, wooded area of Foley-Calhoun complex, in the SE¼NE¼-NE¼ sec. 13, T. 12 N., R. 1 E.:

A1—0 to 4 inches, dark grayish-brown (10YR 4/2) silt loam; weak, medium, granular structure; friable; common fine roots; strongly acid; abrupt, wavy boundary.

A2—4 to 11 inches, pale-brown (10YR 6/3) silt loam; common medium, faint, gray (10YR 6/1) and few medium, distinct, yellowish-brown (10YR 5/8) mottles; weak, medium, subangular blocky structure; friable; common fine roots; few gray (10YR 6/1) silt coatings on faces of peds; very strongly acid; clear, smooth boundary.

B1g—11 to 16 inches, light brownish-gray (10YR 6/2) silt loam; few fine, distinct, yellowish-brown mottles; weak, medium, subangular blocky structure; firm; few patchy clay films on faces of peds and lining pores; gray (10YR 6/1) silt coatings on some faces of peds; common fine roots; few fine, dark concretions; very strongly acid; clear, smooth boundary.

B21tg—16 to 23 inches, light brownish-gray (2.5Y 6/2) silty clay loam; few fine, faint, light yellowish-brown mottles; coarse, prismatic, parting to moderate, medium, subangular blocky structure; firm; many patchy clay films on faces of peds and lining pores; light gray (10YR 7/1) silt coatings on vertical faces of peds; few fine roots; few fine brown and black concretions; strongly acid; gradual, wavy boundary.

B22tg—23 to 34 inches, grayish-brown (2.5Y 5/2) silty clay loam; few fine, distinct, yellowish-brown mottles; moderate, medium, subangular blocky structure; firm; thick clay films on faces of peds; black coatings on vertical faces of some peds; light-gray (10YR 7/1) silt interfingering between peds; few fine roots; few fine concretions; mildly alkaline; gradual, wavy boundary.

B23tg—34 to 43 inches, grayish-brown (2.5Y 5/2) silty clay loam; common fine, prominent, dark-brown mottles; moderate, medium, subangular blocky structure; firm; common patchy clay films on faces of peds; black coatings on faces on some peds; many fine concretions; moderately alkaline; gradual, wavy boundary.

B24tg—43 to 60 inches, gray (5Y 5/1) silty clay loam; common medium, prominent, dark-brown (7.5YR 4/4) mottles; moderate, medium, subangular blocky structure; firm; patchy clay films on faces of peds; black coatings on faces of most peds; common fine, dark, concretions; moderately alkaline; clear, wavy boundary.

B25tg—60 to 72 inches, gray (5Y 6/1) silt loam; common medium, prominent, dark-brown (7.5YR 4/4) mottles; weak, medium, subangular blocky structure; firm; common patchy clay films on faces of peds; few black stains on faces of peds; few fine concretions; strongly alkaline.

The A1 horizon is very dark grayish brown to grayish brown. In plowed areas the Ap horizon is dark grayish brown to brown. The A2 horizon is pale brown to light gray. The B horizon is gray, grayish brown, or light brownish gray. Reaction is medium acid to very strongly acid in the A horizon and very strongly acid to medium acid in the B1g and B21tg horizons. It is neutral to strongly alkaline below this in the B22tg, B23tg, B24tg, and B25tg horizons.

Foley soils are associated mainly with Amagon, Calhoun, Calloway, Henry, and Hillemann soils. Foley soils have a higher content of sodium and magnesium in the lower part of the B horizon and are more alkaline in this part of the B horizon than Amagon, Calhoun, Calloway, and Henry soils. Foley soils are more poorly drained than Hillemann soils, and they lack the red mottles in the B horizon of Hillemann soils.

Fo—Foley-Calhoun complex. This level soil complex is on broad flats. The soils are so intermingled and in such a complex and unpredictable pattern that it is impractical to map them separately. Mapped areas range from 10 to 200 acres. Foley soils make up about 60 percent of the complex; Calhoun soils, about 30 percent; and spots of Amagon, Calloway, Henry, and Hillemann soils, and spots of soil similar to Foley that have a high sodium content throughout the subsoil make up the remaining 10 percent.

This unit is suited to farming, but excess water is a severe hazard. Farming operations are delayed several days after a rain unless surface drains are installed. Under good management that includes adequate drainage, crops that leave large amounts of residue can be safely grown year after year.

Calhoun soils have a low content of sodium and magnesium in the subsoil, and in Foley soils the sodium and magnesium content of the subsoil is high. The high content of sodium and magnesium in Foley soils is within 2 feet of the surface in most places. Land grading in areas of Foley soils

Figure 4.—Area of Foley-Calhoun complex that has been graded. The sodium-affected layer was brought too near the surface in spots, causing poor growth of cotton in the field.

is hazardous because a high concentration of sodium is toxic to many plants. Depth to the sodium-affected layer should be determined before cuts are made. If sodium-affected material is brought too near the soil surface, productivity is severely impaired (fig. 4).

The main crops are soybeans, cotton, and rice. Grain sorghum is a suitable crop, and winter small grain can be grown where surface drainage is adequate. Adapted pasture plants are bermudagrass, tall fescue, and white clover. Capability unit IIIw–4; woodland group 3w9.

Grenada Series

The Grenada series consists of moderately well drained, nearly level soils on uplands. These soils formed in thick deposits of loess. Natural vegetation is chiefly mixed hardwoods.

In a representative profile the surface layer is dark grayish-brown silt loam about 8 inches thick. The upper part of the subsoil is yellowish-brown silt loam about 14 inches thick, and the middle part is light-gray silt loam about 5 inches thick. The lower part is a firm, brittle, mottled fragipan about 40 inches thick. This part of the subsoil is 11 inches of grayish-brown silty clay loam and 29 inches of yellowish-brown silt loam. The underlying material is pale-brown, mottled silt loam.

Grenada soils are moderate in natural fertility. Content of organic matter is low. Permeability is slow, and available water capacity is medium. These soils respond well to fertilization. Tilth is easy to maintain. Grenada soils are suited to the commonly grown crops. Nearly all of the acreage is cultivated.

Representative profile of Grenada silt loam, 1 to 3 percent slopes, in a moist, cultivated area in the SW¼NE¼-NW¼ sec. 21, T. 10 N., R. 3 E.:

Ap—0 to 8 inches, dark grayish-brown (10YR 4/2) silt loam; weak, medium, granular structure; friable; few fine roots; few dark concretions; medium acid; abrupt, smooth boundary.
B21—8 to 15 inches, yellowish-brown (10YR 5/6) silt loam; weak, medium, subangular blocky structure; friable; few fine roots; few dark concretions; strongly acid; clear, wavy boundary.
B22—15 to 22 inches, yellowish-brown (10YR 5/4) silt loam; common medium, distinct, brownish-yellow (10YR 6/6) mottles; weak, medium, subangular blocky structure; friable; few fine roots; strongly acid; clear, wavy boundary.
A'2—22 to 27 inches, light-gray (10YR 7/1) silt loam; common fine, distinct, yellowish-brown mottles; weak, medium, subangular blocky structure; friable; slightly brittle; strongly acid; clear, wavy boundary.
B'x1—27 to 38 inches, grayish-brown (10YR 5/2) silty clay loam; common medium, distinct, yellowish-brown (10YR 5/8) mottles; moderate, medium, subangular blocky structure; firm, brittle; patchy clay films on faces of peds; peds coated with light-gray (10YR 7/1) silt; strongly acid; gradual, wavy boundary.
B'x2—38 to 53 inches, yellowish-brown (10YR 5/6) silt loam; few medium, distinct, dark yellowish-brown (10YR 4/4), and common medium, distinct, light brownish-gray (10YR 6/2) mottles; weak, medium, prismatic structure parting to weak, medium, subangular blocky; firm, brittle; few patchy clay films on faces of peds; gray (10YR 6/1) silt coatings on faces of some peds; few fine concretions; strongly acid; gradual, wavy boundary.
B'x3—53 to 67 inches, yellowish-brown (10YR 5/6) silt loam; many medium, distinct, light brownish-gray (10YR 6/2) mottles; weak, medium, subangular blocky structure; firm, brittle; few patchy clay films on faces of peds; gray (10YR 6/1) silt coatings on faces of some peds; few fine concretions; strongly acid; gradual, wavy boundary.
C—67 to 83 inches, pale-brown (10YR 6/3) silt loam; common medium, distinct, yellowish-brown (10YR 5/6) mottles; massive; friable; medium acid.

The Ap horizon is dark grayish brown to yellowish brown. The B2 horizon is dark yellowish-brown or yellowish-brown silt loam or silty clay loam. The B22 horizon is mottled in shades of light gray to brownish yellow. The A'2 horizon is grayish brown to light gray. The A horizon is medium acid to strongly acid; the B2, A'2, and B'x horizons are very strongly acid or strongly acid; and the C horizon is strongly acid to neutral.

Grenada soils are chiefly associated with Calloway and Loring soils. The Grenada soils lack the mottles in the upper part of the B horizon of the Calloway soils. They have A'2 horizons that are lacking in the Loring soils.

GrB—Grenada silt loam, 1 to 3 percent slopes. This nearly level soil is on uplands. Individual areas range from about 5 to 200 acres. Included in mapping are spots of Calloway and Loring soils.

This soil is suited to farming, but runoff is medium and the hazard of erosion is moderate. Under good management that includes contour cultivation and terracing on long slopes, crops that leave large amounts of residue can be grown year after year. Small grain and other drilled crops may be grown without attention to row direction.

The main crops are cotton and soybeans. Other suitable crops are corn, grain sorghum, and winter small grain. Okra is a suitable truck crop. Adapted pasture plants are bermudagrass, bahiagrass, tall fescue, and white clover. Capability unit IIe–1; woodland group 3o7.

Hayti Series

The Hayti series consists of poorly drained, level soils on the lower part of natural levees. These soils formed in stratified and predominantly loamy sediments. Natural vegetation is water-tolerant hardwoods.

In a representative profile the upper part of the surface layer is very dark gray loam about 8 inches thick, and the lower part is pale-brown and dark yellowish-brown loamy sand about 3 inches thick. The subsoil is dark-gray and gray, mottled silt loam and silty clay loam. The underlying material is gray, mottled silty clay loam and sandy clay loam.

Hayti soils are high in natural fertility. Content of organic matter is medium. Permeability is slow, and available water capacity is high. These soils respond well to fertilization. Tilth is easy to maintain. A plowpan has formed beneath the plow layer in places. This restricts root penetration and movement of water through the soil.

If they are drained and well managed, these soils are suited to most crops grown in the county. Nearly all of the acreage is cultivated.

Representative profile of Hayti loam in a moist, cultivated area of Hayti soils in the SW¼SE¼SW¼ sec. 4, T. 12 N., R. 7 E.:

Ap—0 to 8 inches, very dark gray (10YR 3/1) loam; weak, fine, granular structure; friable; common fine roots; neutral; abrupt, smooth boundary.
A12—8 to 11 inches, pale-brown (10YR 6/3) and dark yellowish-brown (10YR 4/4) loamy sand; single grained; loose; few fine roots; neutral; abrupt, smooth boundary.
B21g—11 to 16 inches, dark-gray (10YR 4/1) silt loam; common fine, distinct, strong-brown mottles; massive parting to weak, medium, subangular blocky structure; friable; common medium, black, accretions and many medium, dark concretions; few fine roots; neutral; clear, smooth boundary.
B22g—16 to 26 inches, gray (10YR 6/1) silt loam; common medium, distinct, strong-brown (7.5YR 5/6) mottles; massive parting to weak, medium, subangular blocky structure; friable; neutral; gradual, smooth boundary.
B23g—26 to 36 inches, gray (10YR 6/1) silty clay loam; common medium, prominent, reddish-brown (5YR 4/3) mottles; massive parting to weak, medium, subangular blocky structure; firm; common fine, black concretions; neutral; clear, smooth boundary.
Cg—36 to 62 inches, gray (10YR 5/1) silty clay loam; common fine and medium, distinct, yellowish-brown (10YR 5/6) mottles; massive; firm; neutral; gradual, smooth boundary.
IICg—62 to 72 inches, gray (10YR 5/1) sandy clay loam; common medium, prominent, reddish-brown (5YR 4/4) mottles; massive; firm; neutral; clear, smooth boundary.

The Ap horizon is very dark grayish-brown to very dark gray loam to silty clay loam. The A12 horizon is absent in many profiles. The B horizon is stratified layers, without a regular sequence, that range from silt loam or silty clay loam to loam or clay loam, and from dark dark gray to light brownish gray. The C horizon has the same range of colors and textures as the B horizon. The IIC horizon ranges from sandy clay loam to loamy sand. Reaction is slightly acid to mildly alkaline throughout the profile.

Hayti soils are mainly associated with Beulah, Convent, Dundee, Mhoon, and Sharkey soils. They are more poorly drained and less acid in the upper part of the profile than Beulah and Dundee soils. They have a higher average clay content and are more poorly drained than Convent soils. Hayti soils have lower color value in the Ap or A1 horizon than Mhoon soils. They formed in stratified, predominantly loamy sediments; Sharkey soils formed in clayey sediments.

Ha—Hayti soils. This level undifferentiated group consists of Hayti soils and similar soils. Slopes are less than 1 percent. Hayti soils have a surface layer that ranges from loam to silty clay loam in a random, irregular pattern. The similar soils have a thick surface layer of stratified loamy sand to fine sandy loam that is 18 to 24 inches thick and is over stratified layers of loam to silty clay loam. Mapped areas range from 20 to more than 1,000 acres in size. The Hayti soils make up about 60 percent of an area; the similar soils, 20 percent; and spots of Beulah, Convent, Dundee, Mhoon, and Sharkey soils and sand spots, the remaining 20 percent. The sand spots, or sand blows, are nearly circular to oblong mounds 10 to 100 feet wide and as much as 600 feet long. These are material extruded through fissures during the New Madrid earthquake of 1811–12 (*7*).

Protected areas and occasionally flooded areas of this mapping unit are suited to general farming, but excess

water is a severe hazard. Farming operations are often delayed several days after a rain unless surface drains have been installed. The variable texture of the surface layer makes uniform tillage and other management difficult. Under good management that includes adequate drainage, crops that leave large amounts of residue can be grown year after year.

Some areas of this unit are within the St. Francis River Floodway and are subject to flooding of variable frequency and duration. These areas are poorly suited or unsuited to general farming. Excess water is a very severe hazard.

The main crops in the protected and occasionally flooded areas are soybeans and cotton. Other suitable crops are grain sorghum, corn, alfalfa, and winter small grain. Suitable pasture plants include bermudagrass, bahiagrass, tall fescue, and white clover. In the frequently flooded areas, catch crops of soybeans and grain sorghum can be grown but the crop may be damaged by floods some years. Capability unit IIIw-5, protected and occasionally flooded part; capability unit IVw-1, frequently flooded part; woodland group 1w6.

Henry Series

The Henry series consists of poorly drained, level soils on broad upland flats and in depressions. These soils formed in thick deposits of loess. Natural vegetation is water-tolerant hardwoods.

In a representative profile the surface layer is grayish-brown silt loam about 6 inches thick. The subsurface layer is gray, mottled silt loam about 14 inches thick. The upper part of the subsoil is a firm, brittle fragipan of gray, mottled silt loam about 25 inches thick. The lower part is gray, mottled silty clay loam that extends to a depth of about 61 inches. The underlying material is light brownish-gray, mottled silt loam.

Henry soils are moderate in natural fertility. Content of organic matter is low. Permeability is slow, and available water capacity is medium. These soils respond well to fertilization. Tilth is easy to maintain. A plowpan has formed beneath the plow layer in places. This restricts root penetration and movement of water through the soil.

When they are drained and well managed, these soils are suited to most crops commonly grown in the county. Most of the acreage is cultivated.

Representative profile of Henry silt loam in a moist, cultivated area in the NE¼NE¼NE¼ sec. 24, T. 12 N., R. 3 E.:

Ap—0 to 6 inches, grayish-brown (10YR 5/2) silt loam; weak, fine, granular structure; friable; many fine roots; neutral; abrupt, smooth boundary.

A2g—6 to 20 inches, gray (10YR 6/1) silt loam; few fine, distinct, yellowish-brown mottles; weak, medium, subangular blocky structure; friable; many fine roots; few fine, dark concretions; strongly acid; gradual, smooth boundary.

Bx1—20 to 28 inches, gray (10YR 6/1) silt loam; common medium, distinct, yellowish-brown (10YR 5/6) and strong-brown (7.5YR 5/6) mottles; weak, medium, subangular blocky structure; firm, brittle; few fine roots between peds; common fine pores; streaks and pockets of grayish-brown silt loam; very strongly acid; clear, irregular boundary.

Bx2—28 to 45 inches, gray (10YR 6/1) silt loam; common medium, distinct, yellowish-brown (10YR 5/6) and common medium, prominent, yellowish-red (5YR 4/6) mottles; coarse polygons parting to weak, medium, subangular blocky structure; firm; brittle; thin patchy clay films on faces of peds; few fine concretions; very strongly acid; gradual, wavy boundary.

B3g—45 to 61 inches, gray (5Y 5/1) silty clay loam; few medium, distinct, yellowish-brown (10YR 5/8) mottles; weak, medium, subangular blocky structure; firm; thin patchy clay films on faces of peds; pockets of gray (10YR 6/1) silt; strongly acid; gradual, smooth boundary.

C—61 to 72 inches, light brownish-gray (10YR 6/2) silt loam; common medium, distinct, yellowish-brown (10YR 5/8) mottles; massive; friable; medium acid.

The Ap or A1 horizon is dark gray to brown. The A2g horizon is gray or light brownish gray. The Bx horizon is gray, light olive gray, or light brownish gray. The B3g horizon has the same range of colors as the Bx horizon, and it is silt loam or silty clay loam. The Ap or A1 horizon is neutral to very strongly acid, the A2 and B horizons are very strongly acid or strongly acid, and the C horizon is very strongly acid to mildly alkaline.

Henry soils are chiefly associated with Calhoun, Calloway, and Grenada soils. They have fragipans that the Calhoun soils lack. Henry soils are more poorly drained, have more gray color in the upper part of their profiles, and lack the A'2 horizons of Calloway and Grenada soils.

He—Henry silt loam. This poorly drained soil is on broad upland flats and in depressions. Individual areas range from 20 to 400 acres. Slopes are less than 1 percent. Included in mapping are spots of Calhoun, Calloway, and Grenada soils.

This soil is suited to farming, but excess water is a severe hazard. Farming operations are delayed several days after a rain unless surface drains are installed. Under good management that includes adequate drainage, crops that leave large amounts of residue can be safely grown year after year.

The main crops are soybeans and cotton. Grain sorghum and rice are suitable crops, and in winter small grain can be grown if surface drainage is adequate. Adapted pasture plants are bermudagrass, bahiagrass, tall fescue, and white clover. Capability unit IIIw-6; woodland group 3w9.

Hillemann Series

The Hillemann series consists of somewhat poorly drained, level soils on broad flats. These soils formed predominantly in loamy sediments laid down by wind or water. Natural vegetation is hardwoods.

In a representative profile the surface layer is dark-gray silt loam about 6 inches thick. The subsurface layer is light brownish-gray, mottled silt loam about 8 inches thick. The subsoil is light-gray, light brownish-gray, and grayish-brown, mottled silty clay loam that extends to a depth of 75 inches or more.

Hillemann soils are moderate in natural fertility. Content of organic matter is medium to low. Permeability is very slow, and available water capacity is medium to high. These soils respond well to fertilization. They are easy to till, but the surface puddles and becomes crusted after a rain. A plowpan has formed below plow depth in places. This restricts root penetration and movement of water through the soil.

When they are drained and well managed, these soils are suitable for most crops grown in the county. Nearly all of the area is cultivated.

Representative profile of Hillemann silt loam in a moist, cultivated area in the NE¼NE¼NE¼ sec. 12, T. 11 N., R. 1 E.:

Ap—0 to 6 inches, dark-gray (10YR 4/1) silt loam; few fine, distinct, dark-brown mottles; weak, medium, granular structure; friable; many fine roots; red stains along roots and root channels; mildly alkaline; abrupt, smooth boundary.

A2g—6 to 14 inches, light brownish-gray (10YR 6/2) silt loam; few fine, distinct, yellowish-brown mottles; massive parting to weak, medium, subangular blocky structure; many fine roots; many fine pores; red stains along roots and root channels; mildy alkaline; clear, wavy boundary.

B21tg—14 to 26 inches, light-gray (10YR 7/2) silty clay loam; many medium, prominent, red (2.5YR 4/8) mottles; moderate, medium, subangular blocky structure; firm; continuous clay films on faces of most peds; few fine roots; common tongues, 1 inch in diameter, of gray (10YR 5/1) silt loam; few fine, dark concretions; medium acid; clear, wavy boundary.

B22tg—26 to 33 inches, light brownish-gray (10YR 6/2) silty clay loam; few fine, distinct, yellowish-brown mottles; moderate, medium, subangular blocky structure; friable; common patchy clay films on faces of peds; few fine roots; many fine, dark concretions; medium acid; gradual, wavy boundary.

B23tg—33 to 53 inches, light brownish-gray (10YR 6/2) silty clay loam; common medium, distinct, yellowish-brown (10YR 5/8) mottles; moderate, medium, subangular blocky structure; few patchy clay films and common black veination on faces of peds; few dark concretions; slightly acid; clear, wavy boundary.

B32g—63 to 75 inches, light brownish-gray (10YR 6/2) silty clay common medium, distinct, yellowish-brown (10YR 5/8) mottles; moderate, medium, subangular blocky structure; firm; few fine, dark concretions; neutral; gradual, wavy boundary.

B32g—63 to 75 inches, light brownish-gray (10YR 6/2) silty clay loam; common medium, prominent, red (2.5Y 5/6) and strong-brown (7.5YR 5/8) mottles; moderate, medium, subangular blocky structure; firm; mildly alkaline; clear, wavy boundary.

The Ap horizon ranges from dark gray to brown, and the A2 horizon is light brownish gray or grayish brown. The B horizon is light gray, light brownish gray, or grayish brown. Depth to the B21tg horizon ranges from 12 to 18 inches. The A horizon is strongly acid to mildly alkaline, and the B21tg and B22tg horizons are very strongly acid to medium acid. The B23tg, B31g, and B32g horizons are slightly acid to mildly alkaline.

Hillemann soils are associated with Calloway and Henry soils. They lack the fragipan of Calloway and Henry soils. Hillemann soils have a higher content of sodium in the subsoil than Calloway and Henry soils, and they are better drained than Henry soils.

Hm—Hillemann silt loam. This somewhat poorly drained level soil is on uplands. Individual areas range from 50 to 400 acres. Included in mapping are spots of Calloway and Henry soils and a few spots where slopes are as much as 2 percent.

This soil is suited to farming, but excess water is a moderate hazard. Farming operations are delayed several days after a rain unless surface drains are installed. Under good management that includes adequate drainage, crops that leave large amounts of residue can be safely grown year after year.

Hillemann soils have a high content of sodium and magnesium in the subsoil, which is less than a depth of about 18 inches in most places. Land grading is hazardous, because a high concentration of sodium is toxic to many plants. Depth to the sodium-affected layer should be determined before cuts are made. If sodium-affected material is brought too near the surface, productivity is severely impaired.

The main crops are rice and soybeans. Grain sorghum is a suitable crop and winter small grain can be grown when surface drainage is adequate. Adapted pasture plants are bermudagrass, bahiagrass, tall fescue, and white clover. Capability unit IIw-1; woodland group 3w9.

Jackport Series

The Jackport series consists of poorly drained, level soils in abandoned backswamps. These soils formed in beds of predominantly clayey sediments. Natural vegetation is water-tolerant hardwoods.

In a representative profile the surface layer is very dark grayish-brown silty clay loam about 3 inches thick. The subsurface layer is gray, mottled silty clay about 12 inches thick. The upper part of the subsoil is dark-gray, mottled clay about 16 inches thick. The middle part is grayish-brown clay about 13 inches thick. The lower part is gray, mottled silty clay that extends to a depth of about 61 inches. The underlying material is gray, mottled silty clay loam.

Jackport soils are moderate in natural fertility. Content of organic matter is medium. Permeability is very slow, and available water capacity is high. These soils respond well to fertilization. The surface layer forms clods if the soils are plowed when too wet, and a seedbed is somewhat difficult to prepare. These soils shrink and crack as they dry. They expand and the cracks seal when they are wet. If adequately drained, these soils are suitable for most crops grown in the county. Nearly all of the acreage is cultivated.

Representative profile of Jackport silty clay loam, in a moist, cultivated area in the NE¼SW¼NW¼ sec. 29, T. 10 N., R. 1 E.:

Ap—0 to 3 inches, very dark grayish-brown (10YR 3/2) silty clay loam; weak, medium, granular structure; firm; many fine roots; strongly acid; abrupt, smooth boundary.

A2g—3 to 15 inches, gray (10YR 5/1) silty clay; common fine and medium, prominent, yellowish-red (5YR 4/6) mottles; moderate, medium, subangular blocky structure; firm, plastic; few fine roots; few fine pores; very strongly acid; clear, wavy boundary.

B21tg—15 to 31 inches, dark-gray (10YR 4/1) clay; few fine, prominent, yellowish-red mottles in the upper 4 inches; moderate, medium, subangular blocky structure; firm; plastic; few fine roots; few fine pores; common slickensides that do not intersect; few dark concretions; very strongly acid; gradual, wavy boundary.

B22tg—31 to 44 inches, grayish-brown (2.5Y 5/2) clay; moderate, medium, subangular blocky structure; firm, plastic; few fine pores; few slickensides that do not intersect; few dark concretions; strongly acid; clear, wavy boundary.

B3g—44 to 61 inches, gray (5Y 5/1) silty clay; common medium, prominent, yellowish-red (5YR 4/6) mottles in the lower 5 inches; moderate, medium, subangular blocky structure; firm, plastic; few dark concretions; neutral; gradual, wavy boundary.

Cg—61 to 74 inches, gray (5Y 5/1) silty clay loam; common medium, prominent, yellowish-brown (10YR 5/8) mottles; massive; firm; common calcium carbonate nodules; few dark concretions; mildly alkaline.

The Ap horizon is very dark gray to brown. The B3g horizon is silty clay or clay. The A horizon is medium acid to very strongly acid, and the B21tg and B22tg horizons are strongly acid or very strongly acid. The B3g horizon is medium acid to mildly alkaline, and the Cg horizon is slightly acid to mildly alkaline.

Jackport soils are mainly associated with Foley and Tichnor soils. They are finer textured than Foley and Tichnor soils, which have mixed mineralogy. Jackport soils lack the high content of sodium in the B horizon of Foley soils.

Jc—Jackport silty clay loam. This level soil is in broad depressions that are backswamps of former large rivers. Slopes are less than 1 percent. Individual areas range from 20 to 100 acres in size. Included in mapping are a few areas where slopes are 1 to 3 percent, a few narrow escarpments, and spots of Foley and Tichnor soils.

This soil is suited to farming, but excess water is a severe hazard. Farming operations are often delayed several days after a rain unless surface drains are installed. Under good management that includes adequate drainage, crops that leave large amounts of residue can be safely grown year after year.

The main crops are soybeans and rice. Grain sorghum is a suitable crop. Winter small grain can be grown where surface drainage is adequate. Adapted pasture plants are bermudagrass, tall fescue, and white clover. Capability unit IIIw-1; woodland group 2w6.

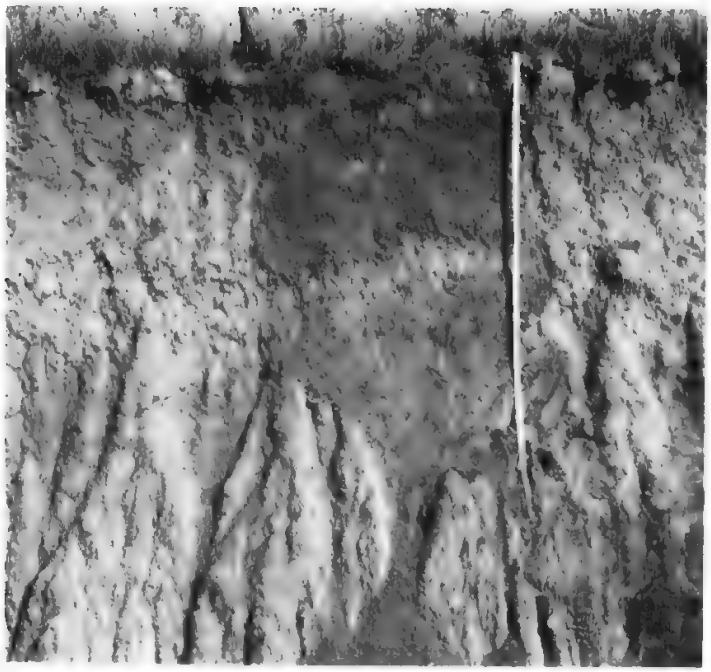

Figure 5.—Profile of Loring silt loam, 3 to 8 percent slopes, eroded. The light-colored band in the center marks the upper boundary of the fragipan.

Loring Series

The Loring series consists of moderately well drained gently sloping to moderately steep soils on uplands. These soils formed in deposits of thick loess. Natural vegetation is hardwoods or mixed pines and hardwoods.

In a representative profile the surface and the subsurface layers are brown silt loam about 8 inches thick. The subsoil extends to a depth of 75 inches or more. The upper part is strong-brown silty clay loam about 18 inches thick. The lower part is a brittle fragipan of strong-brown, mottled and streaked silty clay loam and silt loam.

Loring soils are moderate in natural fertility. Content of organic matter is low. Permeability is moderately slow, and available water capacity is medium. These soils respond well to fertilization. Tilth is easy to maintain. The fragipan restricts the penetration of roots and the movement of water, but it does not seriously affect soil productivity or the choice of plants (fig. 5). These soils are very erodible.

Under intensive management Loring soils are suited to the commonly grown crops, but much of the acreage is in pasture.

Representative profile of Loring silt loam, 3 to 8 percent slopes, eroded, in a moist, wooded area in the SW¼NE¼ NW¼ sec. 9, T. 11 N., R. 4E.:

A1—0 to 2 inches, brown (10YR 4/3) silt loam; weak, medium, granular structure; friable; many fine and medium roots; very strongly acid; abrupt, smooth boundary.

A3—2 to 8 inches, brown (7.5YR 4/4) silt loam; moderate, fine and medium, subangular blocky structure; friable; many fine and medium roots; very strongly acid; clear, wavy boundary.

B2t—8 to 26 inches, strong-brown (7.5YR 5/6) silty clay loam; moderate, medium, subangular blocky structure; firm; few medium roots; patchy clay films on faces of peds; very strongly acid; clear, smooth boundary.

Bx1—26 to 40 inches, strong-brown (7.5YR 5/6) silty clay loam; common medium, distinct, light brownish-gray (10YR 6/2) and common medium, faint, yellowish-brown (10YR 5/6) mottles; moderate, coarse, prismatic structure parting to moderate, medium, subangular blocky; firm, brittle; few medium roots between prisms; friable gray silt in seams between prisms; patchy clay films on faces of peds; very strongly acid; clear, wavy boundary.

Bx2—40 to 60 inches, strong-brown (7.5YR 5/6) silt loam; common medium, distinct, gray (10YR 6/1), yellowish-brown (10YR 5/6), and brown (10YR 5/3) mottles; moderate, coarse, prismatic structure parting to moderate, medium, subangular blocky; firm, brittle; few medium roots between prisms; friable gray silt coats on faces of prisms; patchy clay films on faces of peds; very strongly acid; clear, wavy boundary.

Bx3—60 to 75 inches, strong-brown (7.5YR 5/6) silt loam; moderate, coarse, prismatic structure parting to moderate, medium, subangular blocky; firm, brittle; few fine roots in gray silt between prisms; patchy clay films on faces of peds; few fine concretions; strongly acid.

The A1 or Ap horizon is brown, dark grayish brown, or grayish brown. The B2t horizon is dark-brown or strong-brown silt loam or silty clay loam. The Bx horizon is at a depth of 24 to 32 inches. It is dark-brown or strong-brown silt loam or silty clay loam. The A horizon is very strongly acid to slightly acid, and the B horizon is very strongly acid or strongly acid.

Loring soils are mainly associated with Calloway, Grenada, and Memphis soils. Unlike Memphis soils, Loring soils have a mottled fragipan. Also, Loring soils lack the A'2 horizon of Calloway and Grenada soils, and they are better drained than Calloway soils.

LgC2—Loring silt loam, 3 to 8 percent slopes, eroded. This moderately well drained, gently sloping soil is on uplands. Individual areas range from 10 to 200 acres in size. This soil has the profile described as representative of the series. Much of the original surface layer has been removed by sheet erosion, and patches of the subsoil are exposed. Most areas have a few rills and shallow gullies. Included in mapping are spots of Memphis, Calloway, and Grenada soils.

This soil is suited to farming, but runoff is medium to rapid, and the hazard of erosion is severe. Under good management that includes contour cultivation and terracing, sown crops that leave large amounts of residue can be safely grown year after year. Clean-tilled crops can be grown most years if the cropping system includes a sod crop or winter cover crop. Conservation practices need to be intensified as slope length and gradient increase. The surface of this soil puddles and crusts readily after a rain because of the low content of organic matter and weak structure of the soil material.

The main crops are cotton and soybeans. Other suitable crops are corn, grain sorghum, peaches, and winter small grains. Adapted pasture plants are bermudagrass, bahiagrass, tall fescue, and white clover. Capability unit IIIe-1; woodland group 3o7.

LgD2—Loring silt loam, 8 to 12 percent slopes, eroded. This moderately well drained, moderately sloping soil is on uplands. Individual areas range from 10 to 200 acres in size. Erosion has removed some of the original surface layer and exposed patches of subsoil. In places plowing has mixed the original surface layer with part of the subsoil. Most areas have a few rills and shallow gullies. Included in mapping are a few spots of Memphis soils and a few gullied spots.

Runoff is rapid, and the hazard of erosion is very severe. This soil is poorly suited to cultivated crops, but small grain and other drilled crops may be safely grown occasionally if the cropping system includes close-growing cover most of the time. This soil is better suited to pasture (fig. 6) than to other uses. Suitable pasture plants are bermudagrass, bahiagrass, tall fescue, and white clover. Capability unit IVe-1; woodland group 3o7.

Figure 6.—Second-growth trees have been cleared to establish pasture in this area of Loring silt loam, 8 to 12 percent slopes, eroded.

Memphis Series

The Memphis series consists of well-drained, moderately steep and steep soils on uplands. These soils formed in deposits of thick loess. Natural vegetation is hardwoods or mixed pines and hardwoods.

In a representative profile the surface layer is dark grayish-brown silt loam about 3 inches thick. The subsurface layer is dark yellowish-brown silt loam about 7 inches thick. The subsoil is dark-brown silt loam and silty clay loam that extends to a depth of 57 inches. The underlying material is dark-brown silt loam.

Memphis soils are moderate in natural fertility. Content of organic matter is medium to low. Permeability is moderate, and available water capacity is high. These soils respond well to fertilization. Tilth is easy to maintain.

Because of steep slopes these soils are unsuited to crops. They are suited to pasture except where slopes are too steep to permit good pasture management. These areas of steeper soils are well suited to woodland, however, and most are used for this purpose. Memphis soils are mapped only in complex with Loring soils.

Representative profile of Memphis silt loam in a moist, wooded area of Memphis-Loring complex, 12 to 40 percent slopes, in the NW¼SW¼NE¼ sec. 16, T. 12 N., R. 4 E.:

A1—0 to 3 inches, dark grayish-brown (10YR 4/2) silt loam; weak, fine and medium, granular structure; friable; common fine roots; very strongly acid; clear, smooth boundary.

A2—3 to 10 inches, dark yellowish-brown (10YR 4/4) silt loam; weak, fine and medium, granular structure; friable; common fine roots; very strongly acid; clear, smooth boundary.

B21t—10 to 25 inches, dark-brown (7.5YR 4/4) silt loam; weak, fine and medium, subangular blocky structure; friable; few fine roots; few light yellowish-brown silt coatings along roots and root channels; patchy clay films on faces of peds; few patchy, dark coatings on faces of peds in lower part of horizon; few fine roots; common fine pores; strongly acid; gradual, wavy boundary.

B22t—25 to 43 inches, dark-brown (7.5YR 4/4) silty clay loam; moderate, medium, subangular blocky structure; firm; few fine roots; common fine pores; continuous clay films on faces of peds; few patchy, dark coatings on faces of peds; strongly acid; gradual, wavy boundary.

B3t—43 to 57 inches, dark-brown (7.5YR 4/4) silty clay loam; weak, medium, subangular blocky structure; firm; few fine roots; few patchy clay films on faces of peds; few streaks of light yellowish-brown silt; common patchy, dark coatings on faces of peds; strongly acid; gradual, wavy boundary.

C—57 to 74 inches, dark-brown (7.5YR 4/4) silt loam; massive; friable; few vertical seams filled with pale-brown silt; medium acid.

The A1 horizon is dark grayish brown, brown, or dark brown. The A2 horizon is dark yellowish brown to brown. The B horizon is silt loam or silty clay loam. The C horizon is dark brown or brown. The A horizon is slightly acid to very strongly acid, and the B horizon is strongly acid or very strongly acid. The C horizon is very strongly acid to medium acid.

Memphis soils are associated with Loring soils. Memphis soils are free of mottles and lack the fragipans characteristic of Loring soils.

MeE—Memphis-Loring complex, 12 to 40 percent slopes. This moderately steep and steep soil complex is on

Figure 7.—Intensive treatment is needed to control erosion along roadsides in an area of Memphis-Loring complex, 12 to 40 percent slopes.

narrow ridges and side slopes of Crowley Ridge. Loring soils are mostly on narrow ridges and interfluves, and Memphis soils are on side slopes. The soils are so intermingled that it is impractical to map them separately. Mapped areas range from 10 to 160 acres. The profile of the Loring soil is similar to the one described as representative of the series. Memphis soils make up about 60 percent of the area; Loring soils, about 30 percent; and Brandon and Saffell soils, the remaining 10 percent.

The soils of this unit are not suitable for cultivation. Runoff is rapid, and the hazard of erosion is very severe (fig. 7). These soils are better suited to pasture or woodland than to other uses. Capability unit VIIe-1; woodland group 2r8.

Mhoon Series

The Mhoon series consists of poorly drained, level soils on the lower parts of young natural levees. These soils formed in stratified beds of predominantly loamy sediments. Natural vegetation is water-tolerant hardwoods.

In a representative profile the surface layer is dark grayish-brown silt loam about 6 inches thick. The upper part of the subsoil is gray, mottled silt loam 9 inches thick; the middle part is gray, mottled silty clay loam about 20 inches thick; and the lower part is gray, mottled silt loam about 7 inches thick. The underlying material, at a depth of about 42 inches, is gray and dark-gray, mottled silty clay loam and silt loam.

Mhoon soils are high in natural fertility. Content of organic matter is medium to low. Permeability is slow and the available water capacity is high. These soils respond well to fertilization. Tilth is easy to maintain. A plowpan has formed in places. This pan restricts root penetration and the movement of water through the soil material.

These soils are suited to most crops commonly grown in the county. Nearly all of the acreage is cultivated.

Representative profile of Mhoon silt loam in a moist, cultivated area in the SW¼SW¼NW¼ sec. 12, T. 11 N., R. 4 E.:

Ap—0 to 6 inches, dark grayish-brown (10YR 4/2) silt loam; weak, fine to medium, granular structure; friable; common fine roots; slightly acid; abrupt, smooth boundary.

B1g—6 to 15 inches, gray (10YR 5/1) silt loam; common medium, distinct, dark-brown (7.5YR 4/4) mottles; weak, medium, subangular blocky structure; friable; common fine roots; mildly alkaline; clear, smooth boundary.

B2g—15 to 26 inches, gray (10YR 5/1) silty clay loam; common medium, distinct, strong-brown (7.5YR 5/8) mottles; weak, medium, subangular blocky structure; firm; few fine roots; few fine, dark concretions; few root channels filled with gray silt; mildly alkaline; clear, smooth boundary.

B31g—26 to 35 inches, gray (N 5/0) silty clay loam; common medium, prominent, strong-brown (7.5YR 5/8) mottles; weak, medium, subangular blocky structure; firm; few fine roots; few small, dark concretions; mildly alkaline; clear, smooth boundary.

B32g—35 to 42 inches, gray (10YR 6/1) silt loam; weak, medium, subangular blocky structure; friable; many dark concretions; mildly alkaline; clear, smooth boundary.

C1g—42 to 60 inches, gray (10YR 5/1) silty clay loam; common, medium, distinct, yellowish-brown (10YR 5/8) mottles; massive; firm; few dark concretions; mildly alkaline; clear, wavy boundary.

C2g—60 to 73 inches, gray (5Y 5/1) silty clay loam; common medium, distinct, olive (5Y 5/4) and common coarse, faint, dark-gray (5Y 4/1) mottles; massive; firm, plastic; moderately alkaline; clear, wavy boundary.

C3g—73 to 82 inches, dark-gray (5Y 4/1) silt loam; common medium, distinct, olive (5Y 4/4) and olive-yellow (5Y 6/6) mottles; massive; friable; moderately alkaline.

The Ap horizon is dark grayish brown or dark gray, and the B horizon is dark gray or gray. The C horizon is dark gray to light brownish gray, and in some profiles it contains thin lenses of silty clay and fine sandy loam. The A and B horizons are slightly acid to mildly alkaline, and the C horizon is mildly alkaline or moderately alkaline.

Mhoon soils are associated with Convent, Hayti, and Sharkey soils. They are grayer and more poorly drained than Convent soils, and, unlike the Sharkey soils, they formed in predominantly loamy rather than clayey sediments. They have higher color value in the A horizon than Hayti soils.

Mo—Mhoon silt loam. This level soil is on the lower parts of natural levees. Slopes are less than 1 percent. Mapped areas range from about 20 to 400 acres in size. Included in mapping were spots of Convent, Hayti, and Sharkey soils.

Protected areas of this soil are suited to general farming, but excess water is a severe hazard. Farming operations are often delayed several days after a rain unless surface drains have been installed. Under good management that includes adequate drainage, crops that leave large amounts of residue can be grown year after year.

Some areas of this unit are within the St. Francis River Floodway; others are along the Cache River. These areas are subject to flooding of variable frequency and duration, and they are poorly suited or unsuited to general farming. Excess water is a very severe hazard.

The main crops on the protected areas are soybeans and cotton. Other suitable crops are grain sorghum, corn, alfalfa, and winter small grain. Suitable pasture plants include bermudagrass, bahiagrass, tall fescue, and white clover. In the frequently flooded areas, catch crops of soybeans and grain sorghum can be grown, but the crop is lost some years because of flooding. Capability unit IIIw-5, protected part; capability unit IVw-1, frequently flooded part; woodland group 1w6.

Saffell Series

The Saffell series consists of well-drained, moderately steep soils on uplands of Crowley Ridge. These soils formed in deposits of gravelly, loamy water-laid sediments. The natural vegetation is mixed shortleaf pine and hardwood trees.

In a representative profile the surface layer is dark grayish-brown gravelly fine sandy loam about 3 inches thick. The subsurface layer is pale-brown gravelly fine sandy loam about 9 inches thick. The upper part of the subsoil is yellowish-brown gravelly fine sandy loam about 14 inches thick. The lower part is yellowish-red gravelly sandy clay loam about 30 inches thick. The underlying material is strong-brown gravelly loamy coarse sand.

Saffell soils are low in natural fertility. Content of organic matter is low. Permeability is moderate, and available water capacity is low. The soils are better suited to woodland than to other uses.

These soils are mapped only in complex with Brandon soils. This complex was described previously in this section along with the soils of the Brandon serises.

Representative profile of Saffell gravelly fine sandy loam in an area of Brandon-Saffell complex, 12 to 20 percent slopes, in a moist, wooded area in the SW¼SW¼NE¼ sec. 17, T. 12 N., R. 4 E.:

A1—0 to 3 inches, dark grayish-brown (10YR 4/2) gravelly fine sandy loam; weak, fine, granular structure; very friable; many fine roots; about 30 percent, by volume, pebbles as much as 3 inches in diameter; very strongly acid; clear, smooth boundary.

A2—3 to 12 inches, pale-brown (10YR 6/3) gravelly fine sandy loam; weak, fine, granular structure; very friable; few fine roots; about 40 percent, by volume, pebbles as much as 3 inches in diameter; very strongly acid; clear, wavy boundary.

B1—12 to 26 inches, yellowish-brown (10YR 5/4) gravelly fine sandy loam; weak, fine, subangular blocky structure; friable; few fine roots; about 50 percent, by volume, pebbles and cobbles as much as 4 inches in diameter; very strongly acid; clear, wavy boundary.

B2t—26 to 56 inches, yellowish-red (5YR 4/6) gravelly sandy clay loam; moderate, fine to medium, subangular blocky structure; friable; thin patchy clay films on faces of peds; sand grains coated and bridged and pebbles coated with clay; few fine roots; about 60 percent, by volume, pebbles and cobbles as much as 4 inches in diameter; few pockets of pale-brown (10YR 6/3) loamy coarse sand; very strongly acid; gradual, wavy boundary.

IIC—56 to 72 inches, strong-brown (7.5YR 5/6) gravelly loamy coarse sand; single grained; loose; few fine roots; about 50 percent, by volume, pebbles as much as 3 inches in diameter; very strongly acid.

The A1 horizon is dark grayish brown or dark brown. The A2 horizon is pale brown to yellowish brown. The A horizon ranges from silt loam to gravelly fine sandy loam. Gravel content ranges from none to 50 percent.

The B1 horizon ranges from brown or yellowish brown to yellowish red. It is gravelly loam or gravelly fine sandy loam. Gravel content ranges from 25 to 60 percent. The B2t horizon is strong brown to red. Gravel content is 40 to 70 percent.

The C horizon is brown to yellowish-red, gravelly loamy coarse sand to gravelly fine sandy loam. Gravel content is 20 to 80 percent of the volume. Reaction is strongly acid or very strongly acid throughout the profile.

Saffell soils are associated with Brandon soils. They contain more sand than Brandon soils, and they are gravelly throughout their B horizon. Saffell soils have less silt in the upper part of the B horizon than Brandon soils, and the B horizon of Brandon soils contains few or no pebbles.

Sharkey Series

The Sharkey series consists of poorly drained, level soils in slack-water areas. These soils formed in thick beds of clayey sediments. Natural vegetation is water-tolerant hardwoods.

In a representative profile the surface layer is very dark grayish-brown clay about 7 inches thick. The subsoil is dark-gray, mottled clay about 39 inches thick. The underlying material is dark-gray and gray, mottled silty clay and silty clay loam.

Sharkey soils are high in natural fertility. Content of organic matter is medium to high. Permeability is very slow, and available water capacity is high. These soils respond well to fertilization. Tilth is difficult to maintain because of the high content of clay, and a seedbed is difficult to prepare. If these soils are plowed when wet, hard, persistent clods form. These soils shrink and crack as they dry, and they expand and the cracks seal when they are wet.

If they are drained and well managed, these soils are suited to most crops grown in the county. Most of the acreage is cultivated.

Representative profile of Sharkey clay, in a moist, cultivated area in the NE¼NE¼SW¼ sec. 13, T. 12 N., R. 7 E.:

Ap—0 to 2 inches, very dark grayish-brown (10YR 3/2) clay; moderate, fine, granular structure; firm, plastic; common fine roots; few fine pores; slightly acid; abrupt, smooth boundary.

A1—2 to 7 inches, very dark grayish-brown (10YR 3/2) clay; few medium, distinct, dark yellowish-brown (10YR 4/4) mottles; moderate, medium, subangular blocky structure; firm, plastic; common fine roots; few fine, dark concretions; slightly acid; abrupt, smooth boundary.

B1g—7 to 14 inches, dark-gray (10YR 4/1) clay; common medium, distinct, dark yellowish-brown (10YR 4/4) mottles; moderate, medium, subangular blocky structure; firm, plastic; few fine roots; few fine, dark concretions; neutral; diffuse boundary.

B2g—14 to 32 inches, dark-gray (5Y 4/1) clay; common medium and fine, dark yellowish-brown (10YR 4/4) mottles; moderate, medium, subangular structure; few slickensides; firm, plastic; few fine roots; common fine, dark concretions; neutral; diffuse boundary.

B3g—32 to 46 inches, dark-gray (5Y 4/1) clay; common medium, distinct, dark yellowish-brown (10YR 3/4) mottles; weak, medium, subangular blocky structure; firm, plastic; mildly alkaline; clear, smooth boundary.

C1g—46 to 60 inches, dark-gray (5Y 4/1) silty clay; few medium, distinct, dark yellowish-brown (10YR 4/4) and yellowish-brown (10YR 5/6) mottles; massive; firm, plastic; mildly alkaline; clear, wavy boundary.

C2g—60 to 72 inches, gray (10YR 5/1) silty clay loam; common medium, prominent, dark reddish-brown (5YR 3/4) and yellowish-red (5YR 4/6) mottles; massive; firm, plastic; mildly alkaline.

The A horizon is very dark grayish-brown, dark grayish-brown, or very dark gray loamy fine sand to clay. The B horizon is dark gray or gray. The C horizon is dark-gray or gray silty clay loam, silty clay, or clay. Reaction is slightly acid to mildly alkaline throughout the profile.

Sharkey soils are mainly associated with Bowdre, Hayti, Steele, and Tunica soils. Sharkey soils formed in thicker beds of clay than Bowdre and Tunica soils. They are finer textured than Hayti soils, and they either have thinner sandy upper horizons than Steele soils or lack these horizons entirely.

Sc—Sharkey clay. This level soil is on broad flats. Slopes are less than 1 percent. Individual areas range from 20 to 200 acres in size. This soil has the profile described as representative of the series. Included in mapping are small areas where the soil is undulating. Also included are spots of Bowdre, Tunica, Hayti, and Steele soils.

This soil is suited to farming, but excess water is a severe hazard. Farming operations are often delayed several days after a rain in areas where surface drains have not been installed. Under good management that includes adequate drainage, crops that leave large amounts of residue can be safely grown year after year.

The main crops are soybeans and cotton. Other suitable crops are rice, alfalfa, grain sorghum, and winter small grain. Adapted pasture plants are bermudagrass, bahiagrass, tall fescue, and white clover. Capability unit IIIw-1; woodland group 2w6.

Sm—Sharkey-Steele complex. This soil complex is on broad slack-water flats. Slopes are less than 1 percent. The area is a complex pattern of Steele soils on low mounds and Sharkey soils between mounds, so the surface is somewhat irregular. Sharkey soils are clayey throughout, and Steele soils have sandy layers over clay. Sharkey soils make up about 30 percent of the complex. About 30 percent of it is soils that are similar to Sharkey soils but which have sandy upper layers 10 to 20 inches thick and are transitional to the Steele soils, and about 30 percent is Steele soils. Spots of Hayti and Mhoon soils and spots with sandy upper layers more than 36 inches thick make up the remaining 10 percent.

The soils of this unit are suited to farming, but excess water is a severe hazard. Farming operations are often delayed several days after a rain unless surface drains have been installed. The variation of surface texture on mounds and intermound areas makes uniform tillage difficult. Under good management that includes adequate drainage, crops that leave large amounts of residue can be grown year after year.

The main crops are cotton and soybeans. Other suitable crops are grain sorghum, alfalfa, and winter small grain. Suitable pasture plants include bermudagrass, tall fescue, and white clover. Capability unit IIIw-1; woodland group 2w6.

SN—Sharkey soils, frequently flooded. This level undifferentiated group is on broad flats. Slopes are less than 1 percent. Individual areas are as much as several hundred acres in size. The profile of the Sharkey soil in this unit is similar to the one described as representative of the series, but it has a surface layer of silty clay loam to clay. This unit consists of Sharkey soils and soils that are similar to Sharkey soils except they have an overwash of various thickness of sand and silts. Surface textures are subject to shift and change during major floods.

This unit is in the St. Francis River Floodway. It is flooded, mainly between January and June, for periods of a few days to several months. Floods occur on an average of about once every two years, but some tracts are flooded every year. Included in mapping were spots of Steele and Hayti soils.

The soils of this unit are poorly suited to farming. Flooding is a very severe hazard. Only warm-season, annual crops that require a short growing season can be grown. If the soils are well managed, crops that leave large amounts of residue can be grown year after year; however, the crops are likely to be damaged by floods some years.

Suitable crops are soybeans and grain sorghum. Bermudagrass is the best suited pasture plant. Capability unit IVw-1; woodland group 3w6.

Steele Series

The Steele series consists of moderately well drained, level soils in backswamps. These soils formed in stratified sandy and clayey sediments. Natural vegetation is water-tolerant hardwoods.

In a representative profile the surface layer is grayish-brown loamy fine sand about 4 inches thick. The upper part of the underlying material is pale-brown and grayish-brown loamy fine sand about 22 inches thick. Below this is gray, mottled clay.

Steele soils are low in natural fertility. Content of organic matter is low. Permeability is slow, and available water capacity is low in the upper part of the rooting zone and high in the lower part. These soils give a fair to good response to fertilization. Tilth is easy to maintain, and the soil can be cultivated over a wide range of moisture conditions. Crops wilt during short droughts if plant roots are not established in or near the underlying clay.

These soils are suited to most commonly grown crops. Nearly all of the acreage is cultivated. These soils are mapped only in complex with Sharkey soils. The complex was described previously in this section along with the soils of the Sharkey series.

Representative profile of Steele loamy fine sand in a moist, cultivated area of Sharkey-Steele complex in the NE¼NE¼SW¼ sec. 13, T. 11 N., R. 6 E.:

Ap—0 to 4 inches, grayish-brown (10YR 5/2) loamy fine sand; weak, fine, granular structure; very friable; many fine roots; slightly acid; clear, smooth boundary.

C1—4 to 6 inches, pale-brown (10YR 6/3) loamy fine sand; common horizontal bands of strong-brown (7.5YR 5/6) loamy sand; massive; very friable; few fine roots; slightly acid; clear, smooth boundary.

C2—6 to 26 inches, grayish-brown (10YR 5/2) loamy fine sand; massive; very friable; common bedding planes; slightly acid; abrupt, wavy boundary.

IIC3g—26 to 72 inches, gray (10YR 5/1) clay; common medium, distinct, strong-brown (7.5YR 5/6) mottles; moderate, medium, angular blocky structure; firm, plastic; few thin bands of sand; slightly acid.

The Ap horizon is dark grayish-brown, grayish-brown, or brown loamy fine sand to sandy loam. The C1 and C2 horizons are grayish-brown, brown, or pale-brown loamy fine sand to sand. Depth to the IIC3g horizon is 20 to 36 inches. This horizon is dark gray or gray. The Ap, C1, and C2 horizons are medium acid to mildly alkaline, and the IIC3g horizon is slightly acid to mildly alkaline.

Steele soils are associated with Sharkey soils. They have upper horizons of predominantly sandy material 20 inches or more thick overlying clayey material. Sharkey soils are clayey at depths of 10 inches or less.

Tichnor Series

The Tichnor series consists of poorly drained, level soils in drainageways on uplands. These soils formed in sediments washed mainly from loess. Natural vegetation is water-tolerant hardwoods.

In a representative profile the surface layer is dark grayish-brown silt loam about 4 inches thick. The subsurface layer is light brownish-gray and gray, mottled silt loam that extends to a depth of about 29 inches. The subsoil is light brownish-gray and gray, mottled silty clay loam that extends to a depth of 72 inches or more.

Tichnor soils are low in natural fertility. Content of organic matter is low. Permeability is slow, and available water capacity is high. These soils respond well to fertilization. Tilth is easy to maintain.

Because of flooding these soils are poorly suited or unsuited to the crops commonly grown in the county. Less than one-fifth of the acreage is cultivated.

Representative profile of Tichnor silt loam in a moist, wooded area of Tichnor soils, frequently flooded, in the NE¼NE¼NE¼ sec. 32, T. 10 N., R. 1 E.:

O1—1 inch to 0, partly decomposed leaves and twigs.

A1—0 to 4 inches, dark grayish-brown (10YR 4/2) silt loam; weak, fine, granular structure; friable; many fine roots; strongly acid; clear, wavy boundary.

A21g—4 to 12 inches, light brownish-gray (10YR 6/2) silt loam; common medium, distinct, dark yellowish-brown (10YR 3/4) and yellowish-brown (10YR 5/6) mottles; massive; friable; common fine roots; common fine, dark concretions; strongly acid; clear, smooth boundary.

A22g—12 to 29 inches, gray (10YR 6/1) silt loam; common medium, distinct, yellowish-brown (10YR 5/6) mottles; massive in places, parting to weak, fine, subangular blocky structure; friable; common fine roots; few fine pores; few fine, dark concretions; strongly acid; clear, smooth boundary.

B21tg—29 to 54 inches, light brownish-gray (2.5Y 6/2) silty clay loam; common medium, distinct, yellowish-brown (10YR 5/6) mottles; moderate, medium, subangular blocky structure; firm; common patchy clay films on faces of peds; few fine roots; few fine pores; few fine, dark concretions; strongly acid; gradual, smooth boundary.

B22tg—54 to 72 inches, gray (10YR 6/1) silty clay loam; common medium, distinct, light yellowish-brown (2.5Y 6/4) and common medium, prominent, yellowish-red (5YR 4/6) mottles; moderate, medium, subangular blocky structure; firm; few thin clay films on faces of peds; some pores and root channels lined with clay; common fine pores; few fine, dark concretions; strongly acid.

The A1 or Ap horizon is dark grayish brown, gray, or grayish brown. The A2 horizon is gray, light gray, or light brownish gray, mottled brown to dark yellowish brown. The A horizon is from 20 to 34 inches thick. The B horizon is gray, light brownish gray, or light olive gray. The A1 or Ap horizon is strongly acid or medium acid, and the A2 and B horizons are strongly acid or very strongly acid.

Tichnor soils are mainly associated with Amagon, Calhoun, Foley and Jackport soils. They have a thicker A horizon than Amagon, Calhoun, and Foley soils. Tichnor soils lack the tongues of A horizon into the B horizon of Calhoun and Foley soils, and they lack the high concentration of sodium in the B horizon of Foley soils. Tichnor soils are not as clayey as the Jackport soils.

Tc—Tichnor soils, frequently flooded. This level undifferentiated soil group is on flood plains of upland drainageways. Slopes are less than 1 percent. Individual areas are generally long and narrow, and they range from about 20 to several hundred acres in size. Tichnor silt loam makes up 60 to 95 percent of an area, and similar soils that contain more sand than Tichnor soils make up 0 to 20 percent. Included in mapping are spots of Amagon, Calhoun, Foley, and Jackport soils.

The soils of this unit are flooded one or more times for long periods each year, mainly in winter and spring. Water stands on the surface in much of the area for several months, and it stands on the surface all year if there are periods of unusually heavy rainfall throughout the year. Because of the very severe hazard of flooding, only warm-season catch crops can be grown, mainly along the margins of the areas. Such crops are likely to be lost to floods.

Most of the area is woodland that has shallow, intermittent reservoirs for irrigation water and waterfowl habitat. The best suited crops are soybeans and grain sorghum. The best suited pasture plant is bermudagrass. Capability unit Vw-1; woodland group 1w6.

Tunica Series

The Tunica series consists of poorly drained, level and gently undulating soils in broad slack-water areas. These soils formed in thin beds of clayey sediments over coarser textured sediments. Natural vegetation is water-tolerant hardwood trees.

In a representative profile the surface layer is very dark grayish-brown clay about 6 inches thick. The subsoil is dark-gray, mottled clay about 18 inches thick. Below this is gray, mottled silt loam underlain by brown and light-gray, mottled loamy fine sand that extends to a depth of 80 inches or more.

Tunica soils are high in natural fertility. Content of organic matter is medium. Permeability is very slow, and available water capacity is high. These soils respond well to fertilization. Tilth is difficult to maintain because of the high content of clay, and a seedbed is difficult to prepare. If these soils are plowed when wet, hard and persistent clods form. These soils shrink and crack as they dry, and they expand and the cracks seal when they are wet.

If they are adequately drained and well managed, these soils are suited to most crops grown in the county. Nearly all of the acreage is cultivated.

Representative profile of Tunica clay, 0 to 1 percent slopes, in a moist, cultivated area in the SE¼NE¼SW¼ sec. 10, T. 10 N., R. 6 E.:

Ap—0 to 6 inches, very dark grayish-brown (10YR 3/2) clay; moderate, fine, granular structure; firm, plastic; common fine roots; slightly acid; abrupt, smooth boundary.

B2g—6 to 24 inches, dark-gray (10YR 4/1) clay; common medium, faint, light-gray (10YR 6/1) and common medium, distinct, yellowish-brown (10YR 5/4) mottles; moderate, medium, angular blocky structure; firm, plastic; common fine roots; slightly acid; clear, smooth boundary.

IICg—24 to 59 inches, mottled gray (10YR 5/1) and dark yellowish-brown (10YR 4/4) silt loam; massive; friable; common fine pores; slightly acid; clear, wavy boundary.

IIICg—59 to 80 inches, mottled brown (10YR 5/3) and light-gray (10YR 7/1) loamy fine sand; single grained; loose; few thin lenses of gray (10YR 5/1) silt loam ½ inch to 3 inches thick; neutral.

The Ap horizon is very dark grayish brown or dark grayish brown. The B horizon is dark-gray or gray silty clay or clay. The IICg horizon is gray or dark-gray silt loam or fine sandy loam. The IIICg horizon is brown to light-gray loamy fine sand to sand. It is absent in some profiles. Reaction is slightly acid to mildly alkaline throughout the profile.

Tunica soils are associated with Dubbs and Sharkey soils. They have finer textured A and B horizons than Dubbs soils, and they formed in thinner beds of clayey sediment than the Sharkey soils.

TnA—Tunica clay, 0 to 1 percent slopes. This level soil is at the higher elevations in slack-water areas. Mapped areas range from about 20 to 100 acres. This soil has the profile described as representative of the series. Included in mapping are a few small, undulating areas and spots of Dubbs and Sharkey soils.

This soil is suited to farming, but excess water is a severe hazard. Farming operations are often delayed several days after a rain unless surface drains are installed. Under good management that includes adequate drainage, crops that leave large amounts of residue can be grown year after year.

The main crops are cotton and soybeans. Other suitable crops are alfalfa, grain sorghum, and winter small grain. Suitable pasture plants are bermudagrass, tall fescue, and white clover. Capability unit IIIw-1; woodland group 2w6.

TnU—Tunica clay, undulating. This soil is in areas of alternating long, narrow swales and low ridges that rise 2 to 5 feet above the swales. The areas are on broad slack-water tracts. Slopes are less than 3 percent. Mapped areas range from about 20 to 100 acres. Included in mapping are spots of Dubbs and Sharkey soils.

This soil is suited to farming, but excess water is a severe hazard. Water accumulates in the swales, and farming operations are delayed several days after a rain unless surface drains are installed. Under good management that includes adequate drainage, crops that leave large amounts of residue can be grown year after year.

The main crops are cotton and soybeans. Other suitable crops are alfalfa and grain sorghum. Winter small grain can be grown where surface drainage is adequate. Suitable pasture plants are bermudagrass, tall fescue, and white clover. Capability unit IIIw-1; woodland group 2w6.

Use and Management of the Soils

Discussed in this section are use, suitability, and limitations of the soils for crops, wildlife habitat, woodland, engineering, town and country planning, and recreation.

Use of the Soils for Crops [2]

In this subsection the system of capability grouping used by the Soil Conservation Service is explained, and the predicted yields of major crops grown in the county are presented in tabular form.

Capability grouping

Some readers, particularly those who farm on a large scale, may find it practical to use and manage alike some of the different kinds of soil on their farm. These readers can make good use of the capability classification system, a grouping that shows, in a general way, the suitability of soils for most kinds of farming.

The grouping is based on permanent limitations of soils when used for field crops, the risk of damage when they are farmed, and the way the soils respond to treatment. The grouping does not take into account major and generally expensive landforming that would change slope, depth, or other characteristics of the soils; does not take into consideration possible but unlikely major reclamation projects; and does not apply to rice, cranberries, horticultural crops, or other crops that require special management.

Those familiar with the capability classification can infer from it much about the behavior of soils when used for other purposes, but this classification is not a substitute for interpretations designed to show suitability and limitations for forest trees, for engineering, or for town and country planning.

In the capability system, all kinds of soil are grouped at three levels: the class, the subclass, and the unit. The broadest grouping, the capability class, is designated by Roman numerals I to VIII. In class I are the soils that have the fewest limitations, the widest range of use, and the least risk of damage when they are used. The soils in the other classes have progressively greater natural limitations. In class VIII are soils and landforms so rough, shallow, or otherwise limited that they do not produce worthwhile yields of crops, forage, or wood products. The subclass indicates major kinds of limitations within the classes. Within most classes are as many as four subclasses. The subclasses are indicated by adding a small letter, *e*, *w*, *s*, or *c*, to the class numeral; for example, IIe. The letter "e" shows that the main limitation is risk of erosion unless close-growing plant cover is maintained; "w" means that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); "s" shows that the soil is limited mainly because it is shallow, droughty, or stony; and "c" indicates that the chief limitation is climate that is too cold or too dry.

In class I there are no subclasses, because the soils of this class have few or no limitations. Class V can contain, at the most, only subclasses w, s, and c, because the soils are subject to little or no erosion but have other limitations that confine their use largely to pasture, range or other limitations that confine their use largely to pasture, range, or wildlife.

Subclasses are further divided into groups called capability units. These are groups of soils that are so much alike they are suited to the same crops and pasture plants, require about the same management, and have generally similar productivity and other response to management. Capability units are generally identified by numbers assigned locally, for example, IIe-1 or IIIw-1.

The eight classes in the capability system and the subclasses and units in Poinsett County are described in the list that follows. The unit designation for each soil is given

[2] W. WILSON FERGUSON, conservation agronomist, Soil Conservation Service, helped prepare this section.

in the "Guide to Mapping Units" and at the end of the description of that soil.

Class I. (None in Poinsett County) Soils having few limitations that restrict their use.

Class II. Soils having moderate limitations that reduce the choice of plants or that require moderate conservation practices.
- Subclass IIe. Soils subject to moderate erosion unless protected.
  - Unit IIe-1. Nearly level, moderately well drained and somewhat poorly drained, loamy soils on uplands.
  - Unit IIe-2. Undulating, well-drained, loamy soils on bottom lands.
- Subclass IIw. Soils moderately limited because of excess water.
  - Unit IIw-1. Level, somewhat poorly drained, loamy soils on uplands.
  - Unit IIw-2. Level, moderately well drained and somewhat poorly drained, loamy soils on bottom lands.
  - Unit IIw-3. Nearly level, somewhat poorly drained, loamy soils on bottom lands.
- Subclass IIs. Soils moderately limited because of low available water capacity.
  - Unit IIs-1. Undulating, somewhat excessively drained, loamy soils on bottom lands.

Class III. Soils that have severe limitations that reduce the choice of plants, require special conservation practices, or both.
- Subclass IIIe. Soils subject to severe erosion if they are cultivated and not protected.
  - Unit IIIe-1. Gently sloping, moderately well drained, loamy soils on uplands.
- Subclass IIIw. Soils severely limited for cultivation because of excess water.
  - Unit IIIw-1. Level and undulating, somewhat poorly drained and poorly drained, clayey soils on bottom lands.
  - Unit IIIw-2. Level, poorly drained, loamy soils on bottom lands.
  - Unit IIIw-3. Undulating, somewhat poorly drained, clayey soils on bottom lands.
  - Unit IIIw-4. Level, poorly drained, loamy soils on uplands.
  - Unit IIIw-5. Level, poorly drained, loamy soils on bottom lands. Some are subject to occasional flooding.
  - Unit IIIw-6. Level, poorly drained, loamy soils on uplands.

Class IV. Soils having very severe limitations that reduce the choice of plants, require very careful management, or both.
- Subclass IVe. Soils subject to very severe erosion if they are cultivated and not protected.
  - Unit IVe-1. Gently sloping to moderately sloping, well-drained and moderately well drained, loamy soils on uplands.
- Subclass IVw. Soils very severely limited for cultivation because of excess water.
  - Unit IVw-1. Level, poorly drained, loamy and clayey soils subject to frequent flooding in winter and spring.

Class V. Soils not likely to erode that have other limitations, impractical to remove, limiting their use largely to pasture, range, woodland, or wildlife habitat.
- Subclass Vw. Soils too wet for cultivation; drainage or protection from flooding not feasible.
  - Unit Vw-1. Level, poorly drained, loamy soils subject to frequent flooding.

Class VI. Soils having severe limitations that make them generally unsuited to cultivation and limit their use largely to pasture or range, woodland, or wildlife habitat.
- Subclass VIe. Soils severely limited, chiefly by the risk of erosion, unless protective cover is maintained.
  - Unit VIe-1. Moderately steep, well-drained, loamy soils.

Class VII. Soils having very severe limitations that make them unsuited to cultivation and restrict their use largely to pasture or range, woodland, or wildlife habitat.
- Subclass VIIe. Soils very severely limited, chiefly by risk of erosion unless protective cover is maintained.
  - Unit VIIe-1. Moderately steep and steep, well-drained and moderately well drained, loamy soils on uplands.

Class VIII. (None in Poinsett County) Soils and landforms having limitations that preclude their use for commercial crop production and restrict their use to recreation, wildlife habitat, water supply, or esthetic purposes.

Predicted yields

Table 5 lists predicted yields of the principal crops grown in the county. The predictions are based on estimates made by farmers, soil scientists, agronomists, and others who have knowledge of yields in the county and on information based on research data. The predicted yields are average yields per acre that can be expected by good commercial farmers at a level of management that tends to produce the highest economic returns.

Crops other than those shown in table 5 are grown in the county; however, their predicted yields are not included either because the acreage is small or because reliable data on yields are not available. Dashes in place of a yield in table 5 indicate the crop is not suited to the particular soil or is not commonly grown.

The predicted yields presented in table 5 can be expected if the following management practices are used:

1. Rainfall is effectively used and conserved.
2. Surface drainage systems are installed.
3. Crop residue is managed to maintain soil tilth.
4. Tillage is kept to a minimum but is timely.
5. Insect-, disease-, and weed-control measures are consistently used.
6. Fertilizers are applied according to results of soil tests and crop needs.
7. Adapted crop varieties are used at recommended seeding rates.

The following additional practices and requirements are needed for growing rice:

8. Suitable quality of irrigation water.
9. Irrigations timed to suit the needs of the soil and crop.
10. Irrigation systems that are properly designed and efficiently used.

TABLE 5.—*Predicted average yields per acre of principal crops*

[These yields can be obtained using the improved management practices defined in the text. Absence of a figure indicates that the crop is not suited or not commonly grown]

Soil	Cotton (lint)	Soybeans	Rice	Wheat
	Lbs	*Bu*	*Bu*	*Bu*
Alligator clay	575	30	130	35
Amagon silt loam	625	35	120	
Beulah fine sandy loam, undulating	575	30		45
Bowdre silty clay loam, undulating	625	35	120	40
Brandon silt loam, 3 to 12 percent slopes				35
Brandon-Saffell complex, 12 to 20 percent slopes				
Calloway silt loam, 0 to 1 percent slopes	625	35	120	35
Calloway silt loam, 1 to 3 percent slopes	600	30		35
Collins silt loam, occasionally flooded	800	40		40
Convent silt loam	800	40		45
Dubbs silt loam, undulating	750	40		45
Dundee silt loam, 0 to 2 percent slopes	750	40		45
Earle silty clay loam	700	35	130	45
Falaya silt loam, occasionally flooded	625	35		35
Foley-Calhoun complex	625	35	120	35
Grenada silt loam, 1 to 3 percent slopes	650	35		35
Hayti soils:				
Protected and occasionally flooded part	600	35		40
Frequently flooded part		35		
Henry silt loam	500	30	120	35
Hillemann silt loam	600	35	120	40
Jackport silty clay loam	550	35	130	35
Loring silt loam, 3 to 8 percent slopes, eroded	600	25		35
Loring silt loam, 8 to 12 percent slopes, eroded				30
Memphis-Loring complex, 12 to 40 percent slopes				
Mhoon silt loam:				
Protected part	700	35	130	
Frequently flooded part		35		
Sharkey clay	575	35	130	35
Sharkey-Steele complex	500	35		35
Sharkey soils, frequently flooded		35		
Tichnor soils, frequently flooded		20		
Tunica clay, 0 to 1 percent slopes	700	35	120	45
Tunica clay, undulating	675	35	110	45

Use of the Soils for Wildlife Habitat [3]

Soils directly influence kinds and amounts of vegetation and amounts of water available, and in this way they indirectly influence the kinds of wildlife that can live in an area. Soil properties that affect the growth of wildlife habitat are thickness of soil useful to crops, surface texture, available water capacity, wetness, hazard of flooding, slope, and permeability of the soil to air and water.

In table 6 the soils of Poinsett County are rated for producing six elements of wildlife habitat and three groups, or kinds, of wildlife. The ratings indicate relative suitability for various elements.

A rating of *good* means the element of wildlife and kinds of habitats generally are easily created, improved, and maintained. Few or no limitations affect management in this category, and satisfactory results are expected when the soil is used for the prescribed purpose.

A rating of *fair* means the element of wildlife habitat and kinds of habitats can be created, improved, or maintained in most places. Moderate intensity of management and fairly frequent attention may be required, however, for satisfactory results.

A rating of *poor* means the element of wildlife habitat and limitations for the designated kinds of habitat are severe. Habitats can be created, improved, or maintained in most places, but management is difficult and requires intensive effort.

A rating of *very poor* means use of the soil for the elements of wildlife habitat are very severe and that unsatisfactory results are to be expected. It is either impossible or impractical to create, improve, or maintain habitats on soils in this category.

Elements of wildlife habitat

Each soil is rated in table 6 according to its suitability for producing various kinds of plants and other elements that make up wildlife habitats. The ratings take into account mainly the characteristics of the soils and closely related natural factors of the environment. They do not take into account climate, present use of soils, or present distribution of wildlife and people. For this reason, selection of a site for development as a habitat for wildlife requires inspection at the site.

Grain and seed crops are annual grain-producing plants, such as corn, sorghum, millet, and soybeans.

Grasses and legumes are domestic grasses and legumes that are established by planting. They provide food and cover for wildlife. Grasses include bahiagrass, ryegrass, and panicgrass; legumes include annual lespedeza, shrub lespedeza, and other clovers.

Wild herbaceous upland plants are native or introduced perennial grasses, forbs, and weeds that provide food and

[3] ROY A. GRIZZELL, biologist, Soil Conservation Service, helped prepare this section.

cover for upland wildlife. Beggarweed, perennial lespedeza, wildbean, pokeweed, cheatgrass and partridge pea are typical examples.

Hardwood woody plants are nonconiferous trees, shrubs, and woody vines that produce wildlife food in the form of fruits, nuts, buds, catkins, or browse. Such plants commonly grow in their natural environment, but they may be planted and developed through wildlife management programs. Typical species in this category are oak, beech, cherry, dogwood, maple, viburnum, grape, honeysuckle, greenbriar and mulberry.

Wetland food and cover plants are annual and perennial herbaceous plants that grow wild on wet or moist sites. They furnish food and cover mostly for wetland wildlife. Typical examples of plants are smartweed, wild millet, spikerush and other rushes, sedges, burreed, tearthumb, and aneilema. Submerged and floating aquatics are not included in this catgegory.

Shallow-water developments are impoundments or excavations for controlling water, generally not more than 5 feet deep, to create habitats that are suitable for waterfowl. Some are designed to be drained, planted, and then flooded; others are permanent impoundments that grow submerged aquatics.

Kinds of wildlife habitat

Table 6 rates soils according to their suitability as habitat for the three kinds of wildlife in the county—open-land, woodland, and wetland. These ratings are related to ratings made for the elements of habitat. For example, soils rated very poor for shallow water developments are rated very poor for wetland wildlife.

In the open-land wildlife category are birds and mammals that generally live in meadows, pastures, and open areas where grasses, herbs, and shrubby plants grow. Quail, doves, meadowlarks, field sparrows, cottontail rabbits, and foxes are typical examples of open-land wildlife.

In the woodland wildlife category are birds and mammals that generally live in wooded areas of hardwood trees, coniferous trees, and shrubs. Woodcock, thrushes, wild turkeys, vireos, deer, squirrels, and raccoon are typical examples of woodland wildlife.

Birds and mammals in the wetland wildlife category are those that generally live in wet areas, marshes, and swamps. Ducks, geese, rails, shore birds, herons, minks, and muskrats are typical examples of wetland wildlife.

Use of the Soils for Woodland [4]

Hardwood forests originally covered Poinsett County. The principal commercial trees were southern red oak, cherrybark oak, pin oak, water oak, willow oak, Nuttal oak, Shumard oak, white oak, cow oak, overcup oak, sweetgum, water tupelo, baldcypress, pecan, hackberry, ash, and yellow-poplar.

Now, as a result of overcutting, burning, and land clearing, forests cover less than 15 percent of the county. The trend is toward clearing more land. Improved drainage and flood control have made clearing practical.

Table 7 lists potential productivity of the soils for trees and management concerns for tree crops.

In the first column the soils are listed by their mapping unit symbols after the name of the series to which they belong.

The next column gives the woodland group. Each group is made up of soils that are suited to the same kinds of trees, that need about the same kind of management to produce these trees, and that have about the same potential productivity.

Each woodland group is identified by a three-part symbol. The first part of the symbol indicates the relative productivity of the soils: 1 = very high; 2 = high; 3 = moderately high; 4 = moderate; and 5 = low.

The second part of the symbol, a letter, indicates the important soil property that imposes a moderate or severe hazard or limitation in managing the soils for wood production. The letter *x* indicates that the main limitation is stoniness or rockiness and the letter *w* that excessive water in or on the soil is the chief limitation. The letter *t* indicates that toxic substances in the soil are the chief limitation; *d*, that the rooting depth is restricted; *c*, that clay in the upper part of the soil is a limitation; *s*, that the soils are sandy; *r*, that they have steep slopes; *f*, that the soils have excessive coarse fragments; and *o* that the soils have no significant restrictions or limitations for woodland use or management.

The third element in the symbol indicates the degree of severity of the management problems and the general suitability of the soils for certain kinds of trees.

In the third column is a list of some of the commercially important trees adapted to the soil. These are the trees that woodland managers will generally favor in intermediate or improvement cuttings. Shown in the fourth column is the potential productivity of these trees in terms of site index. The site index is the average height in feet of the dominant trees at the following ages: 30 for cottonwood, 35 for sycamore, 25 for planted pines, and 50 for all other species or types.

Given in the fifth column are the common names of understory grasses, forbs, or low shrubs for a medium tree canopy class (36 to 55 percent canopy). Yields, given in the sixth column, are expressed in pounds of air-dry forage per acre for both favorable and unfavorable years. Understory vegetation is listed for all the soils, although the managed hardwood sites are not commonly grazed because of the hazard of damage to young trees of preferred species.

The management concerns evaluated in columns 7, 8, and 9 are erosion hazard, equipment limitations, and seedling mortality.

The rating for erosion hazard is a measure of the risk of soil losses in well-managed woodland. The rating is *slight* if expected soil loss is small, *moderate* if some measures to control erosion are needed in logging and road construction, and *severe* if intensive treatment or special equipment and methods are needed to prevent excessive soil losses.

Equipment limitation ratings reflect the soil conditions that restrict the use of equipment generally used in woodland management or harvesting. A rating of *slight* indicates equipment use is not limited to kind or time of year, and a rating of *moderate* indicates a seasonal limitation or need for modification in methods or equipment. A rating of *severe* indicates a need for specialized equipment or operations.

Seedling mortality ratings indicate the degree of expected mortality of planted seedlings when plant com-

[4] MAX D. BOLAR, woodland conservationist, and IVAN R. PORTER, range conservationist, Soil Conservation Service, helped prepare this section.

TABLE 6.—*Suitability of the soils for elements*

Soil series and map symbols	Elements of wildlife habitat		
	Grain and seed crops	Grasses and legumes	Wild herbaceous upland plants
Alligator clay: Aa	Fair	Fair	Fair
Amagon silt loam: An	Fair	Fair	Fair
Beulah fine sandy loam, undulating: BeU	Fair	Fair	Fair
Bowdre silty clay loam, undulating: BoU	Fair	Fair	Fair
Brandon silt loam, 3 to 12 percent slopes: BrD	Fair to good	Good	Good
Brandon-Saffell complex, 12 to 20 percent slopes: BsE	Fair to poor	Fair to good	Good
Calloway silt loam, 0 to 1 percent slopes: CaA	Fair	Fair	Good
Calloway silt loam, 1 to 3 percent slopes: CaB	Fair	Fair	Good
Collins silt loam, occasionally flooded: Co	Good	Good	Good
Convent silt loam: Cu	Good	Good	Good
Dubbs silt loam, undulating: DbU	Good	Good	Good
Dundee silt loam, 0 to 2 percent slopes: DdA	Good	Good	Good
Earle silty clay loam: Ec	Fair	Fair	Fair
Falaya silt loam, occasionally flooded: Fa	Fair	Good	Good
Foley-Calhoun complex: Fo	Fair	Fair	Fair
Grenada silt loam, 1 to 3 percent slopes: GrB	Fair	Good	Good
Hayti soils: Ha.			
Protected and occasionally flooded part	Fair	Fair	Fair
Frequently flooded part	Poor	Fair	Fair
Henry silt loam: He	Fair	Fair	Fair
Hillemann silt loam: Hm	Fair	Good	Good
Jackport silty clay loam: Jc	Fair	Fair	Fair
Loring silt loam, 3 to 8 percent slopes, eroded: LgC2	Fair to good	Good	Good
Loring silt loam, 8 to 12 percent slopes, eroded: LgD2	Fair	Good	Good
Memphis-Loring complex, 12 to 40 percent slopes: MeE	Poor to very poor	Fair to poor	Good
Mhoon silt loam: Mo.			
Protected part	Fair	Fair	Fair
Frequently flooded part	Poor	Fair	Fair
Sharkey clay: Sc	Fair	Fair	Fair
Sharkey-Steele complex: Sm	Fair	Fair	Fair
Sharkey soils, frequently flooded: SN	Poor	Fair	Fair
Tichnor soils, frequently flooded: Tc	Poor	Fair	Fair
Tunica clay, 0 to 1 percent slopes: TnA	Fair	Fair	Fair
Tunica clay, undulating: TnU	Fair	Fair	Fair

TABLE 7.—*Woodland groups,*

[Grazing to be restricted where preferred hardwood species are understocked until the species are

Soil series and map symbols	Woodland group	Potential productivity		
		Trees to favor	Site index [1]	Important understory vegetation (medium canopy)
Alligator: Aa	2w6	Green ash Cottonwood Water oak Sweetgum	80 90 90 90	Switchgrass, Virginia wildrye, beaked panicum, redtop panicum, greenbrier, sedges and rushes, other perennial forbs, and other shrubs. Favorable years Unfavorable years
Amagon: An	1w6	Cottonwood Water oak Willow oak Cherrybark oak Nuttall oak Green ash Sweetgum	100 90 90 100 100 90 100	Switchgrass, redtop panicum, beaked panicum, low panicums, Virginia wildrye, sedges, planer tree, wild grape, and other forbs and shrubs. Favorable years Unfavorable years
Beulah: BeU	2o4	Cottonwood Cherrybark oak Nuttall oak Water oak Black walnut	100 90 90 90 80	Switchcane, switchgrass, Virginia wildrye, uniolas, low panicums, peppervine, greenbrier, Virginia creeper. Favorable years Unfavorable years

See footnote at end of table.

of wildlife habitat and for kinds of wildlife

Elements of wildlife habitat—*Continued*			Kinds of wildlife		
Hardwood woody plants	Wetland food and cover plants	Shallow-water developments	Open-land wildlife	Woodland wildlife	Wetland wildlife
Fair	Good	Good	Fair	Fair	Good.
Fair	Good	Good	Fair	Fair	Good.
Good	Very poor	Very poor	Fair	Good	Very poor.
Fair	Poor	Fair	Fair	Fair	Poor.
Good	Poor to very poor	Very poor	Good	Good	Very poor.
Good	Very poor	Very poor	Fair	Good	Very poor.
Good	Fair	Fair	Fair	Good	Fair.
Good	Fair	Fair to poor	Fair	Good	Fair.
Good	Poor	Poor	Good	Good	Poor.
Good	Fair	Fair	Good	Good	Fair.
Good	Poor	Very poor	Good	Good	Very poor.
Good	Fair	Fair	Good	Good	Fair.
Fair	Fair	Fair	Fair	Fair	Fair.
Good	Fair	Fair	Good	Good	Fair.
Fair	Good	Good	Fair	Fair	Good.
Good	Poor	Poor	Good	Good	Poor.
Fair	Good	Good	Fair	Fair	Good.
Fair	Good	Good	Fair	Fair	Good.
Fair	Good	Good	Fair	Fair	Good.
Good	Good	Good	Good	Good	Good.
Fair	Good	Good	Fair	Fair	Good.
Good	Poor	Very poor	Good	Good	Very poor.
Good	Very poor	Very poor	Good	Good	Very poor.
Good	Very poor	Very poor	Fair to poor	Good	Very poor.
Fair	Good	Good	Fair	Fair	Good.
Fair	Good	Good	Fair	Fair	Good.
Fair	Good	Good	Fair	Fair	Good.
Fair	Good to fair	Good to fair	Fair	Fair	Good to fair.
Fair	Good	Good	Fair	Fair	Good.
Fair	Good	Good	Fair	Fair	Good.
Fair	Good	Good	Fair	Fair	Good.
Fair	Fair	Fair	Fair	Fair	Fair.

wood crops, and woodland forage

established and have grown above browsing height. Absence of data indicates that data are unavailable]

Potential productivity —*Continued*	Management concerns			Trees to plant
Yield	Erosion hazard	Equipment limitations	Seedling mortality	
Pounds per acre	Slight	Severe	Moderate	Green ash, cottonwood, sweetgum, sycamore, water oak, Nuttall oak.
3,000 2,000	Slight	Severe	Moderate	Cottonwood, cherrybark oak, Nuttall oak, Shumard oak, water oak, willow oak, sweetgum, sycamore.
2,500 1,500	Slight	Slight	Slight	Cottonwood, cherrybark oak, Nuttall oak, Shumard oak, water oak, willow oak, sycamore, black walnut.
4,000 3,000				

TABLE 7.—*Woodland groups, wood*

Soil series and map symbols	Woodland group	Potential productivity		
		Trees to favor	Site index [1]	Important understory vegetation (medium canopy)
Bowdre: BoU	2w5	Cottonwood	100	Switchgrass, Virginia wildrye, broadleaf uniola, beaked panicum, redtop panicum, velvet panicum, sedges and rushes, greenbrier, swamp privet, other perennial forbs, and other shrubs.
		Cherrybark oak	90	
		Water oak	90	
		Sweetgum	90	
				Favorable years
				Unfavorable years
Brandon: BrD, BsE	3o7	Cherrybark oak	80	Little bluestem, beaked panicum, wildryes, plumegrasses, low panicums, sedges, goldenrods, asters, native lespedezas, wild grape, dogwood, and other shrubs.
		Southern red oak	70	
		Sweetgum	80	
		Loblolly pine	80	
		Shortleaf pine	70	
				Favorable years
				Unfavorable years
Calloway: CaA, CaB	3w8	Cherrybark oak	80	Plumegrasses, little bluestem, switchgrass, longleaf uniola, beaked panicum, low panicums, sedges, other forbs and shrubs.
		Water oak	80	
		Loblolly pine	80	
		Shortleaf pine	70	
		Sweetgum	80	
				Favorable years
				Unfavorable years
Collins: Co	1o7	Green ash	90	Switchcane, Virginia wildrye, indiangrass, switchgrass, beaked panicum, low panicums, longleaf uniola, native lespedezas, swamp sunflower, greenbrier, wild grape, other forbs, and other shrubs.
		Cottonwood	110	
		Cherrybark oak	100	
		Nuttall oak	100	
		Shumard oak	100	
		Water oak	100	
		Loblolly pine	90	
		Shortleaf pine	80	
		Sweetgum	100	
		Sycamore	110	
		Yellow-poplar	100	
				Favorable years
				Unfavorable years
Convent: Cu	1w5	Green ash	90	Switchgrass, eastern gamagrass, Florida paspalum, beaked panicum, Virginia wildrye, low panicums, sedges, swamp sunflower, wild grape, peppervine, other forbs, and other shrubs.
		Cottonwood	100	
		Sweetgum	100	
		Sycamore	100	
				Favorable years
				Unfavorable years
Dubbs: DbU	2o4	Green ash	80	Switchcane, Virginia wildrye, switchgrass, little bluestem, uniolas, beaked panicum, sedges, hawthorn, dogwood, greenbrier, other forbs, and other shrubs.
		Cherrybark oak	100	
		Nuttall oak	95	
		Water oak	90	
		Willow oak	95	
		Shumard oak	100	
		Sweetgum	95	
		Cottonwood	100	
				Favorable years
				Unfavorable years
Dundee: DdA	2w5	Cottonwood	100	Switchgrass, Virginia wildrye, beaked panicum, redtop panicum, velvet panicum, sedges and rushes, swamp privet, other perennial forbs, and other shrubs.
		Cherrybark oak	90	
		Water oak	90	
		Sweetgum	90	
				Favorable years
				Unfavorable years
Earle: Ec	2w6	Green ash	80	Switchgrass, eastern gamagrass, Virginia wildrye, beaked panicum, redtop panicum, sedges, greenbrier.
		Cottonwood	90	
		Cherrybark oak	90	
		Nuttall oak	90	
		Water oak	90	
		Willow oak	90	
		Sweetgum	90	
				Favorable years
				Unfavorable years
Falaya: Fa	1w8	Green ash	90	Switchgrass, plumegrass, velvet panicum, beaked panicum, sedges and rushes, swamp sunflower, peppervine, swamp privet, huckleberry, other forbs, and other shrubs.
		Cottonwood	100	
		Cherrybark oak	100	
		Nuttall oak	110	
		Water oak	100	
		Willow oak	90	
		Loblolly pine	100	
				Favorable years
				Unfavorable years

crops, and woodland forage—Continued

Potential productivity —*Continued*	Management concerns			Trees to plant
Yield	Erosion hazard	Equipment limitations	Seedling mortality	
Pounds per acre				
	Slight	Moderate	Moderate	Cottonwood, sweetgum, sycamore, green ash.
2,500 1,800	Slight	Slight	Slight	Loblolly pine, yellow-poplar, southern red oak, black walnut, redcedar, shortleaf pine.
3,000 1,800	Slight	Moderate	Slight to moderate	Cherrybark oak, Shumard oak, water oak, sweetgum, loblolly pine, redcedar, shortleaf pine.
2,500 2,000	Slight	Slight	Slight	Green ash, white ash, cottonwood, cherrybark oak, Nuttall oak, Shumard oak, loblolly pine, sweetgum, sycamore, yellow-poplar, black walnut, redcedar, shortleaf pine.
3,500 2,000	Slight	Moderate	Slight	Cottonwood, sycamore, green ash, water oak, Nuttall oak.
3,000 2,000	Slight	Slight	Slight	Green ash, cottonwood, Nuttall oak, sweetgum, sycamore, yellow-poplar, black walnut, cherrybark oak.
4,000 3,000	Slight	Moderate	Slight	Cottonwood, cherrybark oak, water oak, sweetgum.
2,500 1,800	Slight	Severe	Moderate	Green ash, cottonwood, sweetgum, sycamore, cherrybark oak, Nuttall oak, Shumard oak, water oak, willow oak.
3,000 2,000	Slight	Moderate	Slight	Green ash, cottonwood, cherrybark oak, Nuttall oak, water oak, yellow-poplar, sweetgum, sycamore, loblolly pine.
2,500 1,800				

TABLE 7.—*Woodland groups, wood*

Soil series and map symbols	Woodland group	Potential productivity		
		Trees to favor	Site index [1]	Important understory vegetation (medium canopy)
Foley: Fo	3w9	Sweetgum	80	Switchgrass, beaked panicum, plumegrasses, low panicums, sedges, greenbrier, farkleberry, and other shrubs.
		Cherrybark oak	80	
		Water oak	80	
		Loblolly pine	80	
				Favorable years
				Unfavorable years
Grenada: GrB	3o7	Cherrybark oak	90	Switchgrass, Florida paspalum, beaked panicum, wildryes, plumegrasses, uniolas, low panicums, sedges, native lespedezas, huckleberry, wild grape, other forbs, and other shrubs.
		Southern red oak	80	
		Water oak	80	
		White oak	70	
		Loblolly pine	80	
		Shortleaf pine	70	
		Sweetgum	80	
		Yellow-poplar		
				Favorable years
				Unfavorable years
Hayti: Ha.				
Protected and occasionally flooded part.	1w6	Green ash	90	Switchcane, switchgrass, eastern gamagrass, redtop panicum, Virginia wildrye, low panicums, sedges, wild grape, peppervine, and other forbs and shrubs.
		Cottonwood	110	
		Water oak		
		Cherrybark oak		
		Sweetgum	100	
		Sycamore		
				Favorable years
				Unfavorable years
Frequently flooded part	1w6	Green ash	90	Switchcane, redtop panicum, sedges and rushes, wild grape, peppervine, and other forbs and shrubs.
		Cottonwood	110	
		Water oak		
		Cherrybark oak		
		Sweetgum	100	
		Sycamore		
				Favorable years
				Unfavorable years
Henry: He	3w9	Sweetgum	80	Switchgrass, beaked panicum, plumegrasses, uniolas, low panicums, sedges, yuccaleaf eryngo, greenbrier, huckleberry, other forbs and other shrubs.
		Loblolly pine	80	
				Favorable years
				Unfavorable years
Hillemann: Hm	3w9	Sweetgum	80	Switchgrass, beaked panicum, plumegrasses, uniolas, low panicums, sedges, yuccaleaf eryngo, greenbrier, huckleberry, other forbs, and other shrubs.
		Water oak	80	
				Favorable years
				Unfavorable years
Jackport: Jc	2w6	Green ash	80	Switchgrass, eastern gamagrass, Virginia wildrye, plumegrass, redtop panicum, low panicums, greenbrier, sedges and rushes, other forbs, and other shrubs.
		Cherrybark oak	90	
		Water oak	90	
		Willow oak	80	
		Sweetgum	90	
				Favorable years
				Unfavorable years
Loring: LgC2, LgD2	3o7	Cherrybark oak	85	Switchgrass, beaked panicum, little bluestem, big bluestem, indiangrass, wildryes, plumegrasses, low panicums, sedges, native lespedezas, goldenrods and asters, Virginia creeper, sassafras, huckleberry, and other forbs and shrubs.
		Southern red oak	75	
		Sweetgum	90	
		Loblolly pine	90	
				Favorable years
				Unfavorable years
Memphis: MeE	2r8	Cherrybark oak	90	Beaked panicum, little bluestem, indiangrass, plumegrasses, low panicums, sedges, sunflowers, asters and goldenrods, native lespedezas, sassafras, wild grape, huckleberry, dogwood, other forbs, and other shrubs.
		Water oak	90	
		Loblolly pine	90	
		Sweetgum	90	
		Yellow-poplar		
				Favorable years
				Unfavorable years

crops, and woodland forage—Continued

Potential productivity —*Continued*	Management concerns			Trees to plant
Yield	Erosion hazard	Equipment limitations	Seedling mortality	
Pounds per acre				
	Slight	Severe	Moderate	Sweetgum, sycamore, loblolly pine, Nuttall oak, cherrybark oak.
3,000 1,500	Slight	Slight	Slight	Cherrybark oak, Shumard oak, water oak, white oak, loblolly pine, shortleaf pine, sweetgum, black walnut.
3,000 2,000	Slight	Severe	Moderate	Cottonwood, sycamore, Nuttall oak, sweetgum, green ash, water oak.
2,000 1,500	Slight	Severe	Moderate	Sycamore, green ash, sweetgum, water oak, Nuttall oak.
1,500 1,000	Slight	Severe	Severe	Shumard oak, water oak, loblolly pine, sweetgum, Nuttall oak.
3,000 2,000	Slight	Moderate	Moderate	Sweetgum, loblolly pine.
3,000 2,000	Slight	Severe	Moderate	Green ash, cottonwood, Nuttall oak, willow oak, sweetgum, sycamore.
3,000 2,000	Slight	Slight	Slight	Loblolly pine, yellow-poplar, southern red oak, black walnut, redcedar, cherrybark oak.
2,500 2,000	Slight	Slight	Moderate	Cherrybark oak, loblolly pine, sweetgum, yellow-poplar, black walnut, redcedar.
2,500 1,800				

TABLE 7.—*Woodland groups, wood crops,*

Soil series and map symbols	Woodland group	Potential productivity		
		Trees to favor	Site index [1]	Important understory vegetation (medium canopy)
Mhoon: Mo.				
Protected part	1w6	Green ash Cottonwood Water oak Cherrybark oak Sweetgum Sycamore	90 110 100 	Switchgrass, eastern gamagrass, redtop panicum, beaked panicum, Virginia wildrye, low panicums, sedges, swamp sunflower, planer tree, wild grape, other forbs, and other shrubs and vines. Favorable years Unfavorable years
Frequently flooded part	1w6	Green ash Cottonwood Water oak Cherrybark oak Sweetgum Sycamore	90 110 100 	Redtop panicum, beaked panicum, Virginia wildrye, velvet panicum, sedges and rushes, trumpetcreeper, wild grape, and other shrubs and vines. Favorable years Unfavorable years
Sharkey:				
Sc, Sm	2w6	Green ash Cottonwood Cherrybark oak Sweetgum Water oak Sycamore	80 100 90 90 	Switchgrass, eastern gamagrass, Virginia wildrye, uniolas, plumegrass, beaked panicum, redtop panicum, sedges, greenbrier, and other forbs and shrubs. Favorable years Unfavorable years
SN	3w6	Green ash Cottonwood Nuttall oak Water oak Pecan	70 90 80 	Switchgrass, eastern gamagrass, Virginia wildrye, uniolas, plumegrass, beaked panicum, redtop panicum, sedges, greenbrier, and other forbs and shrubs. Favorable years Unfavorable years
Tichnor: Tc	1w6	Cottonwood Nuttall oak Cherrybark oak Sweetgum	110 100 90 100	Switchcane, switchgrass, eastern gamagrass, Virginia wildrye, redtop panicum, beaked panicum, low panicums, sedges and rushes, wild grape, peppervine, possumhaw, other forbs, and vines and shrubs. Favorable years Unfavorable years
Tunica: TnA, TnU	2w6	Green ash Cottonwood Cherrybark oak Nuttall oak Sweetgum	100 110 90 105 90	Switchgrass, Virginia wildrye, uniolas, beaked panicum, redtop panicum, sedges and rushes, greenbrier, trumpetcreeper, other forbs, and other shrubs and vines. Favorable years Unfavorable years

[1] Site class ratings have been adapted from data gathered in soil site studies by the Soil Conservation Service and the Forest Service.

petition is not a limiting factor. Normal rainfall, good planting stock, and proper planting are assumed. A *slight* rating indicates expected mortality is less than 25 percent, and a *moderate* one indicates a 25 to 50 percent loss. A *severe* rating indicates a 25 to 50 percent loss of seedlings.

Listed in the last column are suitable trees to plant for commercial wood production.

Engineering Uses of the Soils [5]

This section is useful to those who need information about soils used as structural material or as foundation upon which structures are built. Among those who can benefit from this section are planning commissions, town and city managers, land developers, engineers, contractors, and farmers.

Among properties of soils highly important in engineering are permeability, strength, compaction characteristics, drainage conditions, shrink-swell potential, grain size, plasticity, and reaction (pH). Also important are depth to the water table, depth to bedrock, and soil slope. These properties, in various degrees and combinations, affect construction and maintenance of roads, airports, pipelines, foundations for small buildings, irrigation systems, ponds and small dams, and systems for disposal of sewage and refuse.

Information in this section of the soil survey can be helpful to those who need to

1. Select potential residential, industrial, commercial and recreational areas.
2. Evaluate alternate routes for roads, highways, pipelines, and underground cables.
3. Seek sources of gravel, sand, or clay.

[5] RONNIE L. KEENER, civil engineer, Soil Conservation Service, assisted in preparation of this section.

and woodland forage—Continued

Potential productivity —*Continued*	Management concerns			Trees to plant
Yield	Erosion hazard	Equipment limitations	Seedling mortality	
Pounds per acre				
	Slight	Severe	Moderate	Cottonwood, sycamore, sweetgum, Nuttall oak.
2,500 1,500				
	Slight	Severe	Moderate	Cottonwood, sycamore, sweetgum, Nuttall oak, cherrybark oak.
1,500 1,000				
	Slight	Severe	Moderate	Green ash, cottonwood, cherrybark oak, sweetgum, water oak, sycamore, Nuttall oak.
3,000 2,000				
	Slight	Severe	Severe	Green ash, cottonwood, Nuttall oak, sweetgum.
3,000 2,000				
	Slight	Severe	Moderate	Sycamore, green ash, cottonwood, cherrybark oak, Nuttall oak, water oak.
2,500 2,000				
	Slight	Severe	Moderate	Green ash, cottonwood, cherrybark oak, Nuttall oak, sweetgum, sycamore.
2,000 1,000				

4. Plan farm drainage systems, irrigation systems, ponds, terraces, and other structures for controlling water and conserving soil.
5. Correlate performance of structures already built with properties of the kinds of soil on which they are built to predict performance of structures on the same or similar kinds of soil in other locations.
6. Predict the trafficability of soils for cross-country movement of vehicles and construction equipment.
7. Develop preliminary estimates pertinent to construction in a particular area.

Most of the information in this section is presented in tables 8, 9, and 10. These show, respectively, several estimated soil properties significant to engineering, interpretations for various engineering uses, and results of engineering laboratory tests on soil samples.

This information, along with the soil map and other parts of this publication, can be used to make interpretations. It also can be used to make other useful maps.

This information, however, does not eliminate need for further investigations at sites selected for engineering works, especially works that involve heavy loads or that require excavations to depths greater than those shown in the tables (generally depths of more than 6 feet). Also, inspection of sites, especially the small ones, is needed because many delineated areas of a given soil mapping unit may contain small areas of other kinds of soil that have strongly contrasting properties and different suitabilities or limitations for soil engineering.

Some of the terms used in this soil survey have special meaning in soil science—a meaning that may be somewhat different from the one expected by those accustomed to engineering terms. The Glossary in the back of this publication defines many of these terms.

Engineering soil classification systems

The two systems most commonly used in classifying samples of soils for engineering are the Unified Soil Clas-

TABLE 8.—*Estimated soil properties*

[An asterisk in the first column indicates that at least one mapping unit is made up of two or more kinds of soil. The soils in such for referring to other series as indicated in the first column of this table.

Soil series and map symbols	Depth to seasonal high water table	Depth from surface	USDA texture	Classification		Percentage less than 3 inches passing sieve—	
				Unified	AASHTO	No. 4 (4.7 mm)	No. 10 (2.0 mm)
	Feet	*Inches*					
Alligator: Aa	0-1	0-56	Clay	CH	A-7		
		56-80	Clay	CH	A-7		
Amagon: An	1-2	0-10	Silt loam	ML or CL-ML	A-4		100
		10-55	Silty clay loam and silt loam.	CL or CL-ML	A-4 or A-6		100
		55-73	Very fine sandy loam and sandy loam.	ML, CL-ML, SM, or SC-SM	A-4		100
Beulah: BeU	>6	0-38	Fine sandy loam	SM	A-2 or A-4		100
		38-72	Loamy fine sand	SM	A-2 or A-4		100
Bowdre: BoU	1½-2½	0-14	Silty clay loam and silty clay.	MH or CH	A-7		100
		14-72	Silt loam	ML, CL-ML, or CL	A-4 or A-6		100
*Brandon: BrD,BsE	>6	0-14	Silt loam	ML or CL-ML	A-4		100
For Saffell part of BsE, see Saffell series.		14-28	Silty clay loam	CL or CL-ML	A-4 or A-6		100
		28-38	Gravelly sandy clay loam	SC, SC-SM, GC, or GC-GM	A-2, A-4, or A-6	50-80	47-75
		38-72	Gravelly sandy clay loam	GC or GC-GM	A-2	30-50	25-45
Calhoun	½-1	0-23	Silt loam	ML, CL-ML, or CL	A-4		
Mapped only in complex with Foley series.		23-50	Silt loam and silty clay loam.	CL	A-6		
		50-72	Silty clay loam	CL	A-6		
Calloway: CaA,CaB	1½-2½	0-32	Silt loam	ML, CL-ML, or CL	A-4 or A-6		
		32-68	Silty clay loam and silt loam.	CL	A-6		
		68-83	Silty clay loam	CL	A-6		
Collins: Co [3]	2-5	0-48	Silt loam	ML or CL-ML	A-4		
		48-72	Silt loam	ML or CL-ML	A-4		
Convent: Cu	2-3	0-83	Silt loam and very fine sandy loam.	ML	A-4		100
Dubbs: DbU	3-5	0-11	Silt loam	ML or CL-ML	A-4		
		11-37	Silty clay loam	CL	A-6		
		37-82	Fine sandy loam	ML or CL-ML	A-4		100
Dundee: DdA	1-2	0-6	Silt loam	ML or CL-ML	A-4		100
		6-39	Silt loam and silty clay loam.	CL or CL-ML	A-6 or A-4		100
		39-65	Sandy loam and loamy fine sand.	SM or ML	A-2 or A-4		100
Earle: Ec	0-1	0-4	Silty clay loam	CL or CH	A-6 or A-7		100
		4-29	Silty clay and clay	CH	A-7		100
		29-80	Silt loam, loam, and fine sandy loam.	ML, CL-ML, or CL	A-4 or A-6		100
Falaya: Fa [3]	1½-2	0-85	Silt loam	ML or CL-ML	A-4		

See footnotes at end of table.

significant in engineering

mapping units may have different properties and limitations, and for this reason it is necessary to follow carefully the instructions
The symbol > means more than; the symbol < means less than]

Percentage less than 3 inches passing sieve—*Continued*		Liquid limit	Plasticity index	Permeability [1]	Available water capacity	Reaction	Shrink-swell potential	Corrosivity	
No. 40 (0.42 mm)	No. 200 (0.074 mm)							Uncoated steel	Concrete
				Inches per hour	*Inches per inch of soil*	*pH*			
100	95-100	65-90	35-60	<0.06	0.12-0.18	4.5-5.5	High	High	Moderate to high.
100	95-100	65-90	35-60	<0.06	0.12-0.18	6.6 7.8	High	High	Low.
90-100	85-100	<30	NP-7 [2]	0.6-2.0	0.16-0.24	4.5-6.0	Low	High	Moderate to high.
90-100	85-100	25-40	6-22	0.06-0.2	0.16-0.24	4.5-6.0	Low to moderate.	High	Moderate to high.
70-95	40-65	<30	NP-6	0.6-2.0	0.10-0.20	4.5-6.0	Low	High	Moderate to high.
75-100	30-45		NP	2.0 6.0	0.11-0.15	4.5-6.0	Low	Low	Moderate to high.
75-95	20-40		NP	>6.0	0.07 0.11	4.5-6.0	Low	Low	Moderate to high.
95-100	90-95	51-68	24-40	0.06-0.2	0.14-0.22	6.1-7.8	High	High	Low.
90-100	70-90	25-35	5-12	0.2-0.6	0.16-0.24	6.1-7.8	Low	High	Low.
90-100	85-95	<30	NP-7	0.6-2.0	0.16-0.24	4.5-5.0	Low	Low	High.
80-100	75-95	24-40	5-20	0.6-2.0	0.18-0.22	4.5-5.0	Low	Low	High.
35-65	25-40	23-36	4-15	2.0-6.0	0.08-0.13	4.5-5.0	Low	Low	High.
15-30	5-15	23-36	4-15	2.0-6.0	0.05-0.10	4.5-5.0	Low	Low	High.
100	95-100	20-30	1-10	0.2-0.6	0.18-0.30	4.5-6.0	Low	High	Moderate to high.
100	95-100	30-40	11-20	0.06-0.2	0.18-0.30	4.5-5.5	Low to moderate.	High	Moderate to high.
100	95-100	30-40	11-20	0.06-0.2	0.18-0.22	5.1-8.4	Low to moderate.	High	Moderate to low.
100	90-100	20-32	1-12	0.6-2.0	0.22-0.30	5.1-6.5	Low	High	Moderate.
100	90-100	30-40	12-20	0.06-0.2	0.09-0.12	5.1-7.8	Moderate	High	Moderate to low.
100	90-100	30-40	12-20	0.06-0.2	0.18-0.22	5.1-7.8	Moderate	High	Moderate to low.
100	90-100	<30	NP-7	0.6-2.0	0.22-0.30	4.5-6.0	Low	Moderate	Moderate to high.
100	90-100	<30	NP-7	0.6-2.0	0.22-0.30	5.1-7.3	Low	High	Moderate to low.
90-100	70-100	<30	NP-5	0.6-2.0	0.13 0.24	6.1-7.8	Low	High	Low.
100	90-100	20-30	1-7	0.6-2.0	0.16-0.24	4.5-6.0	Low	Moderate	Moderate to high.
100	90-100	30-40	11-20	0.6-2.0	0.18-0.22	4.5-6.0	Moderate to low.	Moderate	Moderate to high.
85-95	51-65	<25	NP-5	0.6-2.0	0.11-0.15	4.5-6.0	Low	Moderate	Moderate to high.
90-100	80-95	20-30	1-7	0.6-2.0	0.16-0.24	4.5-6.0	Low	High	Moderate to high.
90-100	85-95	25-40	6-20	0.2-0.6	0.16-0.24	4.5-6.0	Moderate to low.	High	Moderate to high.
60-75	35-60	<25	NP-3	2.0-6.0	0.07-0.14	4.5-6.0	Low	High	Moderate to high.
95-100	80-100	30-55	12-35	0.2-0.6	0.16-0.24	4.5-5.5	Moderate	High	Moderate to high.
95-100	95-100	55-75	30-45	<0.06	0.12-0.18	4.5-5.5	High	High	Moderate to high.
90-100	51-90	<35	NP-15	0.6-2.0	0.11-0.24	4.5-6.5	Low	High	Moderate to high.
100	95-100	<30	NP-7	0.6-2.0	0.22-0.30	4.5-5.5	Low	High	Moderate to high.

TABLE 8.—*Estimated soil properties*

Soil series and map symbols	Depth to seasonal high water table	Depth from surface	USDA texture	Classification		Percentage less than 3 inches passing sieve—	
				Unified	AASHTO	No. 4 (4.7 mm)	No. 10 (2.0 mm)
	Feet	*Inches*					
*Foley: Fo	0-1	0-11	Silt loam	ML, CL-ML, or CL	A-4 or A-6		100
For properties of Calhoun part of FO, see Calhoun series.		11-23	Silt loam and silty clay loam.	CL	A-6 or A-7		100
		23-60	Silty clay loam	CL or CH	A-6 or A-7		100
		60-72	Silt loam	CL	A-6 or A-7		100
Grenada: GrB	2-2½	0-8	Silt loam	ML or CL-ML	A-4		
		8-22	Silt loam	CL	A-6		
		22-27	Silt loam	ML or CL-ML	A-4		
		27-67	Silty clay loam and silt loam.	CL	A-6		
		67-83	Silt loam	ML or CL-ML	A-4		
Hayti: Ha [3]	½-1	0-8	Loam	ML or CL-ML	A-4		100
		8-11	Loamy sand	SM	A-2		100
		11-62	Silt loam and silty clay loam.	CL	A-6		100
		62-72	Sandy clay loam	CL, CL-ML, SC, SM-SC	A-4 or A-6		100
Henry: He	½-1	0-20	Silt loam	ML or CL-ML	A-4		
		20-45	Silt loam	CL	A-6		
		45-61	Silty clay loam	CL	A-6		
		61-72	Silt loam	CL, ML, or CL-ML	A-4		
Hillemann: Hm	½-1	0-14	Silt loam	ML, CL-ML, or CL	A-4		98-100
		14-26	Silty clay loam	CL	A-6 or A-7		98-100
		26-33	Silty clay loam	CL	A-6 or A-7		98-100
		33-75	Silty clay loam	CL	A-6 or A-7		98-100
Jackport: Jc	0-1	0-3	Silty clay loam	CL or CH	A-6 or A-7		100
		3-15	Silty clay	CH or MH	A-7		100
		15-44	Clay	CH or MH	A-7		100
		44-61	Silty clay	CH or MH	A-7		100
		61-74	Silty clay loam	CL or CH	A-6 or A-7		100
Loring: LgC2,LgD2	2-3	0-8	Silt loam	ML, CL, or CL-ML	A-4		
		8-26	Silty clay loam	CL	A-4 or A-6		
		26-75	Silty clay loam and silt loam.	CL	A-4 or A-6		
*Memphis: MeE	<6	0-10	Silt loam	CL or CL-ML	A-4		
For properties of Loring part of MeE, see Loring series.		10-25	Silt loam	CL or CL-ML	A-6 or A-4		
		25-57	Silty clay loam	CL	A-6		
		57-74	Silt loam	CL or CL-ML	A-6 or A-4		
Mhoon: Mo [3]	½-1	0-6	Silt loam	ML or CL-ML	A-4		
		6-42	Silt loam and silty clay loam.	CL	A-6		
		42-82	Silty clay loam and silt loam.	CL	A-6		

significant in engineering—Continued

Percentage less than 3 inches passing sieve—*Continued*		Liquid limit	Plasticity index	Permeability [1]	Available water capacity	Reaction	Shrink-swell potential	Corrosivity	
No. 40 (0.42 mm)	No. 200 (0.074 mm)							Uncoated steel	Concrete
				Inches per hour	*Inches per inch of soil*	*pH*			
95-100	90-100	22-40	3-20	0.6-2.0	0.22-0.30	4.5-6.5	Low	High	Moderate to high.
95-100	90-100	30-49	11-25	0.2-0.6	0.18-0.30	4.5-6.0	Moderate	High	Moderate to high.
95-100	90-100	40-60	18-32	0.06-0.2	0.10-0.14	6.6-9.0	Moderate	High	Low.
95-100	90-100	30-45	11-20	0.06-0.2	0.10-0.14	6.6-9.0	Moderate	High	Low.
100	90-100	20-30	1-7	0.6-2.0	0.22-0.30	5.1-6.0	Low	Moderate	Moderate.
100	90-100	30-40	11-20	0.6-2.0	0.22-0.30	4.5-5.5	Low to moderate.	Moderate	Moderate to high.
100	90-100	20-30	1-7	0.6-2.0	0.22-0.30	4.5-5.5	Low	Moderate	Moderate to high.
100	90-100	30-40	11-20	0.06-0.2	0.10-0.15	4.5-5.5	Low to moderate.	Moderate	Moderate to high.
100	90-100	20-30	1-7	0.2-0.6	0.22-0.30	5.1-7.3	Low	Moderate	Low to moderate.
85-95	60-75	20-30	1-7	0.6-2.0	0.15-0.20	6.1-7.8	Low	High	Low.
50-75	15-30		NP	2.0-6.0	0.06-0.10	6.1-7.8	Low	High	Low.
95-100	85-95	30-40	11-20	0.06-0.2	0.16-0.24	6.1-7.8	Low to moderate.	High	Low.
80-90	40-60	25-35	5-15	0.2-0.6	0.12-0.17	6.1-7.8	Low	High	Low.
100	95-100	20-30	1-7	0.6-2.0	0.22-0.30	4.5-7.3	Low	High	Low to high.
100	95-100	30-40	11-18	0.06-0.2	0.10-0.15	4.5-5.5	Low	High	Moderate to high.
100	95-100	30-40	11-18	0.06-0.2	0.18-0.22	4.5-5.5	Low	High	Moderate to high.
100	95-100	25-33	4-10	0.2-0.6	0.22-0.30	4.5-6.0	Low	High	Moderate to high.
90-100	85-100	<30	NP-10	0.2-0.6	0.22-0.30	5.1-7.8	Low	High	Moderate to low.
90-100	90-100	35-48	15-25	<0.06	0.18-0.22	4.5-6.0	Moderate	High	Moderate to low.
90-100	90-100	35-48	15-25	<0.06	0.10-0.14	5.1-6.0	Moderate	High	Moderate.
90-100	90-100	35-48	15-25	<0.06	0.10-0.14	6.1-7.8	Moderate	High	Low.
95-100	85-100	30-55	12-30	0.2-0.6	0.18-0.24	4.5-6.0	Moderate	High	Moderate to high.
95-100	90-100	51-75	25-45	0.06	0.14-0.18	4.5-6.0	High	High	Moderate to high.
95-100	90-100	65-85	35-55	0.06	0.12-0.18	4.5-5.5	High	High	Moderate to high.
95-100	90-100	51-75	25-45	0.06	0.14-0.18	5.6-7.8	High	High	Low to moderate.
95-100	90-100	40-65	18-40	0.06-0.2	0.16-0.24	6.1-7.8	Moderate to high.	High	Low.
100	95-100	25-35	4-10	0.6-2.0	0.22-0.30	4.5-6.5	Low	Moderate	Moderate to high.
100	95-100	30-40	10-20	0.6-2.0	0.18-0.22	4.5-5.5	Low	Moderate	Moderate to high.
100	95-100	30-40	10-20	0.2-0.6	0.10-0.14	4.5-5.5	Low	Moderate	Moderate to high.
100	95-100	22-30	4-10	0.6-2.0	0.22-0.30	4.5-6.5	Low	Low	Moderate to high.
100	95-100	24-34	6-15	0.6-2.0	0.22-0.30	4.5-5.5	Low	Low	Moderate to high.
100	95-100	30-40	11-20	0.6-2.0	0.18-0.22	4.5-5.5	Low	Low	Moderate to high.
100	95-100	24-34	6-15	0.6-2.0	0.22-0.30	4.5-6.0	Low	Low	Moderate to high.
100	95-100	20-30	1-7	0.2-0.6	0.16-0.24	6.1-7.8	Low	High	Low.
100	95-100	30-40	12-20	0.06-0.2	0.16-0.24	6.1-7.8	Moderate	High	Low.
100	95-100	30-40	12-20	0.06-0.2	0.16-0.24	7.4-8.4	Moderate	High	Low.

TABLE 8.—*Estimated soil properties*

Soil series and map symbols	Depth to seasonal high water table	Depth from surface	USDA texture	Classification		Percentage less than 3 inches passing sieve—	
				Unified	AASHTO	No. 4 (4.7 mm)	No. 10 (2.0 mm)
	Feet	*Inches*					
Saffell Mapped only in complex with Brandon series.	6	0-12	Gravelly fine sandy loam	GM or SM	A-1, A-2, or A-4	45-80	35-75
		12-56	Gravelly fine sandy loam and gravelly sandy clay loam.	GC or GC-GM	A-2	35-50	25-50
		56-72	Gravelly loamy coarse sand.	GM, GP-GM, SM or SP-SM	A-1 or A-2	25-80	15-70
*Sharkey: Sc,Sm,SN For properties of Steele part of Sm, see Steele series.	0-1	0-46	Clay	CH	A-7		
		46-60	Silty clay	CH	A-7		
		60-72	Silty clay loam	CL or CH	A-6 or A-7		
Steele Mapped only in complex with Sharkey series.	1½-2	0-26	Loamy fine sand	SM	A-2		100
		26-70	Clay	CH	A-7		100
Tichnor: Tc [3]	0-1	0-29	Silt loam	ML, CL-ML, or CL	A-4 or A-6		100
		29-70	Silty clay loam	CL	A-6		100
Tunica: TnA,TnU	0-1	0-24	Clay	CH or MH	A-7		100
		24-59	Silt loam	CL	A-6 or A-4		100
		59-80	Loamy fine sand	SM	A-2		100

[1] These values should not be confused with the coefficient "K" used by engineers.
[2] NP means nonplastic.
[3] All or part of the areas of this soil are subject to flooding.

TABLE 9.—*Interpretations of*

[An asterisk in the first column indicates that at least one mapping unit in the series is made up of two or more kinds of soil. The soils instructions for referring to another

Soil series and map symbols	Suitability as a source of—		Soil features affecting—
	Topsoil	Road fill [1]	Pond reservoir areas
Alligator: Aa	Poor: poorly drained; plastic, clayey material.	Poor: poorly drained; low bearing capacity; high shrink-swell potential.	Features generally favorable
Amagon: An	Poor: poorly drained	Poor: poorly drained; low bearing capacity.	Features generally favorable
Beulah: BeU	Good	Good to fair; moderate to high bearing capacity.	High seepage rate
Bowdre: BoU	Poor: plastic, clayey material in in the upper 14 inches; good below a depth of 14 inches.	Poor in upper 14 inches: low bearing capacity; high shrink-swell potential. Fair below a depth of 14 inches: moderate bearing capacity; low shrink-swell potential.	Moderately slow permeability below a depth of 14 inches.
*Brandon: BrD, BsE For Saffell part of BsE, see Saffell series.	Fair: thin layer; poor where slopes are more than 15 percent.	Fair in upper 28 inches: moderate bearing capacity. Fair to good below a depth of 28 inches: moderate to high bearing capacity.	Moderately rapid permeability below a depth of 38 inches.

See footnotes at end of table.

significant in engineering—Continued

Percentage less than 3 inches passing sieve—*Continued*		Liquid limit	Plasticity index	Permeability [1]	Available water capacity	Reaction	Shrink-swell potential	Corrosivity	
No. 40 (0.42 mm)	No. 200 (0.074 mm)							Uncoated steel	Concrete
				Inches per hour	*Inches per inch of soil*	*pH*			
25-65	15-45	<20	NP-3	2.0-6.0	0.05-0.10	4.5-5.5	Low	Low	Moderate to high.
20-40	15-35	25-40	6-18	0.6-2.0	0.06-0.10	4.5-5.5	Low	Low	Moderate to high.
5-60	5-35		NP	2.0-6.0	0.04-0.08	4.5-5.5	Low	Low	Moderate to high.
100	95-100	65-90	35-60	<0.06	0.12-0.18	6.1-7.8	High	High	Low.
100	95-100	51-75	25-45	<0.06	0.14-0.18	6.1-7.8	High	High	Low.
100	95-100	40-65	18-40	0.06-0.2	0.16-0.24	6.1-7.8	Moderate to high.	High	Low.
70-85	20-35		NP	2.0-6.0	0.07-0.11	5.6-7.8	Low	Low	Low to moderate.
95-100	90-100	51-75	25-45	0.06-0.2	0.12-0.18	5.1-7.8	High	High	Low to moderate.
95-100	90-100	<35	NP-15	0.6-2.0	0.22-0.30	4.5-6.0	Low	High	Moderate to high.
95-100	90-100	30-40	11-20	0.06-0.2	0.18-0.22	4.5-5.5	Moderate	High	Moderate to high.
95-100	90-100	51-80	25-45	<0.06	0.12-0.18	6.5-7.8	High	High	Low.
95-100	80-90	25-35	8-18	0.6-2.0	0.16-0.24	6.5-7.8	Low	High	Low.
70-85	20-35		NP	2.0-6.0	0.07-0.11	6.5-7.8	Low	High	Low.

engineering properties of the soils

in such mapping units may have different properties and limitations, and for this reason it is necessary to follow carefully the series in the first column of this table]

Soil features affecting—*Continued*			
Embankments, dikes, and levees	Drainage for crops and pasture	Irrigation	Terraces and diversions
Low strength; high compressibility; poor compaction characteristics.	Very slow permeability; poorly drained.	Slow intake rate; very slow permeability; poorly drained; high available water capacity.	Level soil on bottom lands; practice not applicable.
Low strength; medium compressibility; low permeability; fair to good compaction characteristics; subject to piping unless well mixed.	Slow permeability; poorly drained.	Slow intake rate; slow permeability; poorly drained; high available water capacity.	Level soil on bottom lands; practice not applicable.
Medium strength; low to medium compressibility; medium permeability; fair to good compaction characteristics; subject to piping.	Somewhat excessively drained	Moderately rapid intake rate; moderately rapid permeability; medium to low available water capacity.	Undulating soil with irregular slopes on bottom lands; practice not applicable.
Medium to low strength; medium to high compressibility; low to medium permeability; fair to poor compaction characteristics; material below a depth of 14 inches subject to piping.	Slow permeability; somewhat poorly drained.	Slow intake rate; slow permeability; high available water capacity.	Undulating soil with irregular slopes on bottom lands; practice not applicable.
Medium to low strength; low to medium compressibility; low to medium permeability; fair to good compaction characteristics.	Well drained	Moderate intake rate; moderate permeability; medium available water capacity; slopes; medium to rapid runoff.	Slopes more than 8 percent excessive; erodible.

TABLE 9.—*Interpretations of engineering*

Soil series and map symbols	Suitability as a source of—		Soil features affecting—
	Topsoil	Road fill [1]	Pond reservoir areas
Calhoun Mapped only in complex with Foley series.	Poor: poorly drained	Poor: poorly drained	Features generally favorable
Calloway: CaA, CaB	Good	Fair: somewhat poorly drained; moderate bearing capacity.	Features generally favorable
Collins: Co [2]	Good	Fair: moderate bearing capacity	Moderate permeability
Convent: Cu	Good	Fair: somewhat poorly drained; moderate bearing capacity.	Moderate permeability
Dubbs: DbU	Fair: thin layer over moderately plastic material.	Fair: moderate bearing capacity	Moderate permeability
Dundee: DdA [2]	Good	Fair: somewhat poorly drained; moderate bearing capacity.	Moderately slow permeability
Earle: Ec	Poor: somewhat poorly drained; plastic, clayey material; loamy material below a depth of 29 inches.	Poor: somewhat poorly drained; low bearing capacity; high shrink-swell potential; moderate bearing capacity below a depth of 29 inches.	Moderate permeability below a depth of 29 inches.
Falaya: Fa [2]	Good	Fair: somewhat poorly drained; moderate bearing capacity.	Moderate permeability
*Foley: Fo For Calhoun part of Fo, see Calhoun series.	Poor: poorly drained; high sodium content in subsoil, difficult to reclaim.	Poor: poorly drained; low bearing capacity; high sodium content in subsoil, difficult or impossible to reclaim.	Features generally favorable
Grenada: GrB	Good	Fair: moderate bearing capacity	Features generally favorable
Hayti: Ha [2]	Poor: poorly drained	Poor: poorly drained	Features generally favorable

properties of the soils—Continued

Soil features affecting—*Continued*			
Embankments, dikes, and levees	Drainage for crops and pasture	Irrigation	Terraces and diversions
Medium to low strength; medium compressibility; medium to low permeability; fair to good compaction characteristics; subject to piping unless well mixed.	Slow permeability; poorly drained.	Slow intake rate; slow permeability; poorly drained; high available water capacity.	Level soil; practice not applicable.
Medium to low strength; medium compressibility; medium to low permeability; fair to good compaction characteristics; subject to piping unless well mixed.	Slow permeability; somewhat poorly drained.	Slow intake rate; slow permeability; somewhat poorly drained; medium available water capacity.	Soil features generally favorable.
Medium to low strength; medium compressibility; medium to low permeability; fair to poor compaction characteristics; subject to piping.	Moderately well drained; subject to occasional flooding.	Moderate intake rate; moderate permeability; high available water capacity.	Level soil on bottom lands; practice not applicable.
Medium to low strength; medium compressibility; medium to low permeability; fair to poor compaction characteristics; subject to piping.	Somewhat poorly drained	Moderate intake rate; moderate permeability; somewhat poorly drained; high available water capacity.	Level soil on bottom lands; practice not applicable.
Medium to low strength; medium compressibility; medium to low permeability; fair to good compaction characteristics; subject to piping unless well mixed.	Well drained	Moderate intake rate; moderate permeability; high available water capacity.	Undulating soil on bottom lands; practice not applicable.
Medium to low strength; medium compressibility; medium to low permeability; fair to good compaction characteristics; subject to piping unless well mixed.	Moderately slow permeability; somewhat poorly drained; some areas subject to frequent flooding.	Slow intake rate; moderately slow permeability; somewhat poorly drained; high available water capacity.	Level to nearly level soil on bottom lands; practice not applicable.
Low strength; high compressibility; poor compaction characteristics; material below a depth of 29 inches has medium strength and compressibility; fair compaction characteristics; subject to piping.	Very slow permeability; somewhat poorly drained.	Slow intake rate; very slow permeability; high available water capacity; somewhat poorly drained.	Level and undulating soil on bottom lands; practice not applicable.
Medium to low strength; medium compressibility; medium to low permeability; fair to poor compaction characteristics; subject to piping.	Somewhat poorly drained; subject to occasional flooding.	Moderate intake rate; moderate permeability; somewhat poorly drained; high available water capacity; subject to occasional flooding.	Level soil on bottom lands; practice not applicable.
Medium to low strength; medium compressibility; fair to poor compaction characteristics; subsoil on embankments difficult to vegetate; material is dispersed and is highly erodible.	Slow permeability; poorly drained.	Slow intake rate; slow permeability; poorly drained; medium available water capacity.	Level soil; practice not applicable.
Medium to low strength; medium compressibility; medium to low permeability; fair to good compaction characteristics; subject to piping unless well mixed.	Moderately well drained	Slow intake rate; slow permeability; medium available water capacity.	Soil features generally favorable.
Medium to low strength; medium compressibility; fair to good compaction characteristics; subject to piping unless well mixed.	Slow permeability; poorly drained.	Slow intake rate; slow permeability; poorly drained; high available water capacity; some areas subject to frequent flooding.	Level soil on bottom lands; practice not applicable.

TABLE 9.—*Interpretations of engineering*

Soil series and map symbols	Suitability as a source of—		Soil features affecting—
	Topsoil	Road fill	Pond reservoir areas
Henry: He	Poor: poorly drained	Poor: poorly drained	Features generally favorable
Hillemann: Hm	Fair: thin layer over moderately plastic material; high sodium content in subsoil, difficult to reclaim.	Poor: low bearing capacity; high sodium content in subsoil, difficult or impossible to reclaim.	Features generally favorable
Jackport: Jc	Poor: poorly drained; predominantly plastic, clayey material.	Poor: poorly drained; low bearing capacity; high shrink-swell potential.	Features generally favorable
Loring: LgC2, LgD2	Fair: thin layer over moderately plastic material. Poor on slopes more than 15 percent.	Fair: moderate bearing capacity. Poor on slopes more than 25 percent.	Moderately slow permeability
*Memphis: MeE For Loring part of MeE, see Loring series.	Fair: thin layer over moderately plastic material. Poor on slopes more than 15 percent.	Fair: moderate bearing capacity; slopes. Poor on slopes more than 25 percent.	Moderate permeability
Mhoon: Mo [2]	Poor: poorly drained	Poor: poorly drained; low bearing capacity.	Features generally favorable
Saffell Mapped only in complex with Brandon series.	Poor: coarse fragments; many slopes more than 15 percent.	Good. Fair on slopes more than 15 percent.	Moderate permeability
Sharkey: Sc, Sm, SN [2] For Steele part of Sm, see Steele series.	Poor: poorly drained; predominantly plastic, clayey material.	Poor: poorly drained; low bearing capacity; high shrink-swell potential.	Features generally favorable
Steele Mapped only in complex with Sharkey series.	Poor: sandy material	Good. Poor below a depth of 26 inches; low bearing capacity; high shrink-swell potential.	Features generally favorable
Tichnor: Tc [2]	Poor: poorly drained	Poor: poorly drained	Features generally favorable
Tunica: TnA, TnU	Poor: poorly drained; plastic, clayey material; loamy material below a depth of 24 inches.	Poor: poorly drained; plastic, clayey material in upper 24 inches; low bearing capacity; high shrink-swell potential; loamy and sandy material below a depth of 24 inches.	Moderate permeability below a depth of 24 inches.

[1] Engineers and others should not apply specific values to estimates given for bearing capacity of soils.

properties of the soils—Continued

Soil features affecting—*Continued*			
Embankments, dikes, and levees	Drainage for crops and pasture	Irrigation	Terraces and diversions
Medium to low strength; medium compressibility; medium to low permeability; fair to poor compaction characteristics; subject to piping unless well mixed.	Slow permeability; poorly drained.	Slow intake rate; slow permeability; poorly drained; medium available water capacity.	Level soil; practice not applicable.
Low strength; medium compressibility; fair to good compaction characteristics; subsoil on embankments difficult to vegetate; material is dispersed and is highly erodible.	Very slow permeability; somewhat poorly drained.	Slow intake rate; very slow permeability; somewhat poorly drained; medium to high available water capacity.	Level soil; practice not applicable.
Low strength; high compressibility; poor compaction characteristics.	Very slow permeability; poorly drained.	Slow intake rate; very slow permeability; poorly drained; high available water capacity.	Level soil on bottom lands; practice not applicable.
Medium to low strength; medium compressibility; fair to good compaction characteristics.	Moderately well drained	Slow intake rate; moderately slow permeability; medium available water capacity; slopes; medium to rapid runoff.	Slopes more than 8 percent excessive; erodible.
Medium to low strength; medium compressibility; fair to good compaction characteristics.	Well drained	Moderate intake rate; moderate permeability; high available water capacity; rapid runoff.	Slopes excessive; erodible.
Low strength; medium compressibility; fair to good compaction characteristics.	Slow permeability; poorly drained; some areas subject to frequent flooding.	Slow intake rate; slow permeability; poorly drained; high available water capacity; some areas subject to frequent flooding.	Level soil on bottom lands; practice not applicable.
Medium to high strength; low to medium compressibility; good to fair compaction characteristics; subject to piping unless well mixed.	Well drained	Moderate intake rate; moderate permeability; low available water capacity; rapid runoff.	Slopes excessive; erodible.
Low strength; high compressibility; poor compaction characteristics.	Very slow permeability; poorly drained; SN subject to frequent flooding.	Slow intake rate; very slow permeability; poorly drained; high available water capacity; SN subject to frequent flooding.	Level soil on bottom lands; practice not applicable.
Medium strength; low to medium compressibility; fair to good compaction characteristics; subject to piping; material below a depth of 26 inches has low strength; high compressibility; fair to poor compaction characteristics.	Slow permeability	Rapid intake rate; slow permeability; available water capacity low in upper 26 inches, high below a depth of 26 inches.	Level soil on bottom lands; practice not applicable.
Medium to low strength; medium compressibility; medium to low permeability; fair to good compaction characteristics; subject to piping.	Slow permeability; poorly drained; subject to frequent flooding.	Slow intake rate; slow permeability; poorly drained; high available water capacity; subject to frequent flooding.	Level soil on bottom lands; practice not applicable.
Low strength; high compressibility; poor compaction characteristics; material below a depth of 24 inches has medium strength; medium compressibility; fair to good compaction characteristics; subject to piping.	Very slow permeability; poorly drained.	Slow intake rate; very slow permeability; poorly drained; high available water capacity.	Level to undulating soil on bottom lands; practice not applicable.

[2] Parts or all of the areas of this unit subject to flooding.

TABLE 10.—*Engi-*

[Tests performed by the Arkansas State Highway Department in accordance with standard procedures

Soil name and location	Parent material	Arkansas SCS report number S69-Ark-56—	Depth	Moisture density [1]	
				Maximum dry density	Optimum moisture
			Inches	*Pounds per cubic foot*	*Percent*
Hillemann silt loam: NE¼NE¼NE¼ sec. 12, T. 11 N., R. 1 E. (Modal)	Loess	2-3	14-26	101	21
		2-5	33-53	106	19
		2-7	63-75	104	21

[1] Based on AASHTO Designation T 99-57, Method A (*1*).

[2] Mechanical analyses according to the AASHTO Designation T 88-57 (*1*). Results of this procedure may differ somewhat from the results obtained by the soil survey procedure of the Soil Conservation Service (SCS). In the AASHTO procedure, the fine material is analyzed by the hydrometer method, and the various grain-sized fractions are calculated on the basis of all material up to and including that 3 inches in diameter. In the SCS soil survey procedure, the fine material is analyzed by the pipette method, and the material coarser than 2 millimeters in diameter is excluded from the calculation of grain-sized fractions. The mechanical analyses data used in this table are not suitable for use in naming textural classes of soil.

sification system (*3*) used by the SCS engineers, Department of Defense, and others, and the AASHTO system (*1*) adopted by the American Association of State Highway and Transportation Officials.

In the Unified system soils are classified according to particle size distribution, plasticity, liquid limit, and organic matter. Soils are grouped in 15 classes. There are eight classes of coarse-grained soils, identified as GW, GP, GM, GC, SW, SP, SM, and SC; six classes of fine-grained soils, identified as ML, CL, OL, MH, CH, and OH; and one class of highly organic soils, identified as Pt. Soils on the borderline between two classes are designated by symbols for both classes; for example, CL-ML.

The AASHTO system is used to classify soils according to those properties that affect use in highway construction and maintenance. In this system, a soil is placed in one of seven basic groups ranging from A-1 through A-7 on the basis of grain-size distribution, liquid limit, and plasticity index. In group A-1 are gravelly soils of high bearing strength, or the best soils for subgrade (foundation). At the other extreme, in group A-7, are clay soils that have low strength when wet and that are the poorest soils for subgrade. Where laboratory data are available to justify a further breakdown, the A-1, A-2, and A-7 groups are divided as follows A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, and A-7-6. As additional refinement, the engineering value of a soil material can be indicated by a group index number. Group indexes range from 0 for the best material to 20 or more for the poorest. The AASHTO classification for tested soils, with group index numbers in parentheses, is shown in table 10; the estimated classification, without group index numbers, is given in table 8 for all soils mapped in the survey area.

USDA texture is determined by the relative proportions of sand, silt, and clay in soil material that is less than 2.0 millimeters in diameter. "Sand," "silt," "clay," and some of the other terms used in the USDA textural classification are defined in the Glossary.

Estimated soil properties significant in engineering

Several estimated soil properties significant in engineering are given in table 8. These estimates are made for typical soil profiles, by layers sufficiently different to have different significance for soil engineering. The estimates are based on field observations made in the course of mapping, on test data for these and similar soils, and on experience with the same kinds of soils in other counties. Following are explanations of some of the columns in table 8.

Depth to the seasonal high water table is the distance from the surface of the soil to the highest level that ground water reaches in the soil in most years. The depths given in table 8 are the depths to a seasonal perched water table that is separated from the permanent water table by an impervious layer or a dry zone.

Soil texture is described in table 8 in the standard terms used by the Department of Agriculture. These terms take into account relative percentages of sand, silt, and clay in soil material that is less than 2 millimeters in diameter. "Loam," for example, is soil material that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the soil contains gravel or other particles coarser than sand, an appropriate modifier is added, as for example, "gravelly fine sandy loam". "Sand," "silt," "clay," and some of the other terms used in USDA textural classification are defined in the Glossary at the back of this publication.

Liquid limit and plasticity index indicate the effect of water on the strength and consistence of soil material. As the moisture content of a clayey soil is increased from a dry state, the material changes from a semisolid to a plastic state. If the moisture content is further increased, the material changes from a plastic to a liquid state. The plastic limit is the moisture content at which the soil material changes from the semisolid to plastic state; and the liquid limit, from a plastic to a liquid state. The plasticity index is the numerical difference between the liquid limit and the plastic limit. It indicates the range of moisture content within which a soil material is plastic. Liquid limit and plasticity index are estimated in table 8, but in table 10 the data on liquid limit and plasticity index are based on tests of soil samples.

Permeability is that quality of a soil that enables it to transmit water or air. It is estimated on the basis of those soil characteristics observed in the field, particularly structure and texture. The estimates in table 8 do not take into account lateral seepage or such transient soil features

neering test data

of the American Association of State Highway and Transportation Officials (AASHTO) (1)]

Mechanical analysis [2]			Liquid limit [3]	Plasticity index [4]	Classification	
Percentage less than 3 inches passing sieve—						
No. 10 (2.0 mm)	No. 40 (0.42 mm)	No. 200 (0.074 mm)			AASHTO [5]	Unified [6]
			Percent			
99 [7]	96	91	45	22	A-7-6(22)	CL
99 [7]	96	93	37	20	A-6(19)	CL
99 [7]	97	94	43	21	A-7-6(21)	CL

[3] Based on AASHTO Designation T 89-60 (*1*).
[4] Based on AASHTO Designation T 90-56 and AASHTO Designation T 91-54 (*1*).
[5] Based on AASHTO Designation M 145-66 I (*2*).
[6] Based on ASTM Designation D 2487-69 (*3*).
[7] 100 percent passed the No. 4 sieve.

as plow pans and surface crusts. These estimates should not be confused with the coefficient "K" used by engineers.

Available water capacity is the ability of soils to hold water for use by most plants. It is commonly defined as the difference between the amount of water in the soil at field capacity and the amount at the wilting point of most crop plants.

Reaction is the degree of acidity or alkalinity of a soil expressed in pH values. The pH value and terms used to describe soil reaction are explained in the Glossary.

Shrink-swell potential is the relative change in volume to be expected of soil material with changes in moisture content; that is, the extent to which the soil shrinks as it dries or swells when it gets wet. Extent of shrinking and swelling is influenced by the amount and kind of clay in the soil. Shrinking and swelling of soils causes much damage to building foundations, roads, and other structures. A *high* shrink-swell potential indicates a hazard to maintenance of structures built in, on, or with material having this rating.

Corrosivity, as used in table 8, pertains to potential soil-induced chemical action that dissolves or weakens uncoated steel or concrete. Rate or corrosion of uncoated steel is related to soil properties such as drainage, texture, total acidity, and electrical conductivity of the soil material. Corrosivity for concrete is influenced mainly by the content of sodium or magnesium sulfate, but also by soil texture and acidity. Installations of uncoated steel that intersect soil boundaries or soil horizons are more susceptible to corrosion than installations entirely in one kind of soil or in one soil horizon. A corrosivity rating of *low* means that there is a low probability of soil-induced corrosion damage. A rating of *high* means there is a high probability of damage, and protective measures for steel and more resistant concrete should be used to avoid or minimize damage.

Engineering interpretations

The estimated interpretations in table 9 are based on the engineering properties of soils shown in table 8, on test data for soils in this survey area and others nearby or adjoining, and on the experience of engineers and soil scientists with the soils of Poinsett County. In table 9 ratings are used to summarize suitability of the soils for all listed purposes other than for drainage of cropland and pasture, irrigation, ponds, reservoir areas, embankments, and terraces and diversions. For these particular uses, table 9 lists those soil features not to be overlooked in planning, installation, and maintenance. Specific values should not be assigned to the ratings of bearing capacity given in table 9.

Soil suitability is rated by the terms *good*, *fair*, and *poor*. A rating of *good* means that soil properties are generally favorable, and any limitations are so minor that they can be easily overcome; a rating of *fair* means limitations can be overcome or modified by planning, by design, or by special maintenance; and a rating of *poor* means that costly soil reclamation, special design, intense maintenance, or a combination of these, is required.

In the following paragraphs are explanations of some of the columns in table 9.

Topsoil is used for topdressing an area where vegetation is to be established and maintained. Suitability is affected mainly by ease of working and spreading the soil material (when preparing a seedbed, for example); natural fertility of the material, or its response of plants when fertilizer is applied; and absence of substances toxic to plants. Texture of the soil material and its content of stone fragments are characteristics that affect suitability, but also considered in the ratings is damage that will result to the area from which topsoil is taken.

Road fill is soil material used in embankments for roads. The suitability ratings reflect the predicted performance of soil after it has been placed in an embankment that has been properly compacted and provided with adequate drainage and the relative ease of excavating the material at borrow areas.

Pond reservoir areas hold water behind a dam or embankment. Soils suitable for pond reservoir areas have low seepage, which is related to their permeability and depth to fractured or permeable bedrock or other permeable material.

Embankments, dikes, and levees require soil material resistant to seepage and piping and of favorable stability, shrink-swell potential, shear strength, and compactibility. Presence of stones or organic material in a soil are among factors that are unfavorable.

Drainage for crops and pasture is affected by such soil properties as permeability, texture, and structure; depth to a claypan, or other layers that influence rate of water movement; depth to the water table; slope, stability in ditchbanks; susceptibility to stream overflow; salinity or alkalinity; and availability of outlets for drainage.

Irrigation of a soil is affected by such features as slope; susceptibility to stream overflow, water erosion, or soil blowing; soil texture; content of stones; accumulations of salts and alkali; depth of root zone; rate of water intake at the surface; permeability of soil layers below the surface layer and in fragipans or other layers that restrict movement of water; amount of water held available to plants; and need for drainage or depth to water table.

Terraces and diversions are embankments or ridges constructed across the slope to intercept runoff so that it soaks into the soil or flows slowly to a prepared outlet. Features that affect suitability of a soil for terraces are uniformity and steepness of slope; depth to bedrock or other unfavorable material; presence of stones; permeability; and resistance to water erosion, slippage, and soil blowing. A soil suitable for these structures provides outlets for runoff and is not difficult to vegetate.

Additional interpretations that are applicable to engineering uses of soils are given in the section "Use of the Soils for Town and Country Planning."

Engineering test data

Table 10 contains engineering test data for one of the major soil series in Poinsett County. These tests were made to help evaluate the soils for engineering purposes. The engineering classifications given are based on data obtained by mechanical analyses and by tests to determine liquid limits and plastic limits. The mechanical analyses were made by combined sieve and hydrometer methods.

Compaction (or moisture-density) data are important in earthwork. If a soil material is compacted at successively higher moisture content, assuming that the compactive effort remains constant, the density of the compacted material increases until the *optimum moisture content* is reached. After that density decreases with increase in moisture content. The highest dry density obtained in the compactive test is termed *maximum dry density*. As a rule, maximum strength of earthwork is obtained if the soil is compacted to the maximum dry density.

Tests to determine liquid limit and plastic limit measure the effect of water on the consistence of soil material, as has been explained for table 8.

Use of the Soils for Town and Country Planning

Table 11 gives the degree and kind of limitation of the soils of Poinsett County for selected nonfarm uses. The degrees of limitations reflect all the features of a given soil, to a depth of about 6 feet, that affect a particular use.

Soil limitations are indicated by the ratings slight, moderate, and severe. *Slight* means soil properties generally favorable for the rated use or in other words, limitations that are minor and easily overcome. *Moderate* means that some soil properties are unfavorable but can be overcome or modified by special planning and design. *Severe* means soil properties so unfavorable and so difficult to correct or overcome as to require major soil reclamation, special designs, or intensive maintenance.

Dwellings, as rated in table 11, are not more than three stories high and are supported by foundation footings placed in undisturbed soil. The features that affect the rating of a soil for dwellings are those that relate to capacity to support load and resist settlement under load, and those that relate to ease of excavation. Soil properties that affect capacity to support load are wetness, susceptibility to flooding, density, plasticity, texture, and shrink-swell potential. Those that affect excavation are wetness and slope.

Shallow excavations are those that require digging or trenching to a depth of less than 6 feet, as for example, excavations for pipelines, sewer lines, phone and power transmission lines, basements, open ditches, and cemeteries. Desirable soil properties are good workability, moderate resistance to sloughing, gentle slopes, and freedom from flooding or a high water table.

Local roads and streets, as rated in table 11, have an all-weather surface expected to carry automobile traffic all year. They have a subgrade of underlying soil material; a base consisting of gravel, crushed rock, or soil material stabilized with lime or cement; and a flexible or rigid surface, commonly asphalt or concrete. These roads are graded to shed water and have ordinary provisions for drainage. They are built mainly from soil at hand, and most cuts and fills are less than 6 feet deep.

Soil properties that most affect design and construction of roads and streets are load supporting capacity and stability of the subgrade, and the workability and quantity of cut and fill material available. The AASHTO and Unified classifications of the soil material, and also the shrink-swell potential, indicate traffic supporting capacity. Wetness and flooding affect stability of the material. Slope and wetness affect ease of excavation and amount of cut and fill needed to reach an even grade.

Ratings for light industry are for undisturbed soils that are used to support building foundations. Emphasis is on foundations, ease of excavation for underground utilities, and corrosion potential of uncoated steel pipe. The undisturbed soil is rated for spread footing foundations for buildings less than three stories high or foundation loads not in excess of that weight. Properties affecting load-supporting capacity and settlement under load are wetness, flooding and slope. Properties affecting corrosion of buried uncoated steel pipe are wetness, texture, total acidity, and electrical resistivity.

Septic-tank absorption fields are subsurface systems of tile or perforated pipe that distribute effluent from a septic tank into natural soil. The soil material from a depth of 18 inches to 6 feet is evaluated. The soil properties considered are those that affect both absorption of effluent and construction and operation of the system. Properties that affect absorption are permeability, depth to water table, and susceptibility to flooding. Slope is a soil property that affects difficulty of layout and construction and also the risk of soil erosion, lateral seepage, and downslope flow of effluent.

Sewage lagoons are shallow ponds constructed to hold sewage within a depth of 2 to 5 feet long enough for bacteria to decompose the solids. A lagoon has a nearly level floor, and sides, or embankments, of compacted soil material. The assumption is made that the embankment is compacted to medium density and the pond is protected from flooding. Properties are considered that affect the pond floor are permeability, organic matter, and slope. The soil

properties that affect the embankment are the engineering properties of the embankment material as interpreted from the Unified Soil Classification and the amounts of stones, if any, that influence the ease of excavation and compaction of the embankment material.

Sanitary landfill is a method of disposing of refuse in dug trenches. The waste is spread in thin layers, compacted, and covered with soil throughout the disposal period. Landfill areas are subject to heavy vehicular traffic. Some soil properties that affect suitability for landfill are ease of excavation, hazard of polluting ground water, and trafficability. The best soils have moderately slow permeability, withstand heavy traffic, and are friable and easy to excavate. Unless otherwise stated, the ratings in table 11 apply only to a depth of about 6 feet. Limitation ratings of *slight* or *moderate*, therefore, may not be valid if trenches are to be much deeper than 6 feet. For some soils reliable predictions can be made to a depth of 10 to 15 feet, but regardless of that, every site should be investigated before it is selected. For information about the use of soils for area type landfills, contact the local Soil Conservation Service office.

The detailed soil map and information in table 11 are guides for evaluating areas for the specific uses. They do not eliminate the need for detailed onsite investigations before a final determination is made.

Additional information that may be useful in town and country planning is given in the sections "Engineering Uses of the Soils" and "Use of the Soils for Recreational Development."

Use of the Soils for Recreational Development

Knowledge of soils is necessary in planning, developing, and maintaining areas used for recreation. In table 12 the soils of Poinsett County are rated according to limitations that affect their suitability for camp areas, playgrounds, picnic areas, and paths and trails.

In table 12 the soils are rated as having slight, moderate, or severe limitations for the specified uses. For all of these ratings, it is assumed that a good cover of vegetation can be established and maintained. A limitation of *slight* means that soil properties are generally favorable and limitations are so minor that they easily can be overcome. A *moderate* limitation can be overcome or modified by planning, by design, or by special maintenance. A *severe* limitation means that costly soil reclamation, special design, intense maintenance, or a combination of these, is required.

Camp areas are used intensively for tents and small camp trailers and the accompanying activities of outdoor living. Little preparation of the site is required, other than shaping and leveling for tent and parking areas. Camp areas are subject to heavy foot traffic and limited vehicular traffic. The more desirable soils have mild slopes, good drainage, a surface free of coarse fragments, freedom from flooding during periods of heavy use, and a surface that is firm after rains but not dusty when dry.

Playgrounds are areas used intensively for baseball, football, badminton, and similar organized games. Soils suitable for this use need to withstand intensive foot traffic. The better ones have a nearly level surface free of coarse fragments, have good drainage, are free of flooding during periods of heavy use, and have a surface that is firm after rain but not dusty when dry.

Picnic areas are attractive natural or landscaped tracts used primarily for preparing meals and eating outdoors. These areas are subject to heavy foot traffic. Most of the vehicular traffic, however, is confined to access roads. The better soils are firm when wet but not dusty when dry, free of flooding during the season of use, and do not have slopes or stoniness that greatly increases cost of leveling sites or of building access roads.

Paths and trails are used for local and cross country travel by foot or horseback. Design and layout should require little or no cutting and filling. The better soils are at least moderately well drained, are firm when wet but not dusty when dry, are flooded not more than once during the season of use, have slopes of less than 15 percent, and have few or no stones on the surface.

Formation and Classification of the Soils

In this section the factors that affect soil formation in Poinsett County and the processes of horizon differentiation are discussed. Then the current system of soil classification is explained, and the soil series are placed in some of the higher categories of that system. Following that, physical and chemical analyses are given for representative profiles of selected soil series. The soil series in the county, including a profile representative of each series, are described in the section "Descriptions of the Soils."

Factors of Soil Formation

Soil is formed by weathering and other processes that act upon the parent material. The characteristics of the soil at any given point depend upon climate, living organisms, parent material, relief, and time. Each factor acts on the soil and modifies the effect of the other four. When climate, living organisms, or any other one of the five factors is varied to a significant extent, a different soil may be formed (4).

Climate and living organisms are the active forces in soil formation. Relief modifies the effects of climate and living organisms, mainly by its influence on temperature and runoff. Because climate, vegetation, parent material, and relief interact over the years, time is another factor of soil formation. Thus, the effect of time is also reflected in the soil characteristics.

The interaction of the five factors of soil formation is more complex for some soils than for others. These factors and the way they interact to form some of the soils in the county are discussed in the following paragraphs.

Climate

The climate of Poinsett County is characterized by mild winters, hot summers, and generally abundant rainfall. The generally warm temperatures and high precipitation probably are similar to the climate under which the soils in the county formed. For additional information about the climate, refer to section "General Nature of the County."

The warm, moist climate promotes rapid soil formation, and the warm temperature encourages rapid chemical reactions. The large amount of water that moves through the soil is instrumental in removing dissolved or suspended materials. Plant remains decompose rapidly, and the organic acids thus formed hasten the removal of carbonates and the formation of clay minerals. Because the soil is

TABLE 11.—*Degree and kind of limitations of*

Soil series and map symbols	Dwellings without basements [1]	Shallow excavations	Local roads and streets [1]
Alligator: Aa	Severe: poorly drained; perched seasonal high water table; low bearing capacity; high shrink-swell potential.	Severe: poorly drained; perched seasonal high water table; plastic, clayey material.	Severe: poorly drained; low bearing capacity; high shrink-swell potential.
Amagon: An	Severe: poorly drained; perched seasonal high water table; low bearing capacity.	Severe: poorly drained; perched seasonal high water table.	Severe: poorly drained; low bearing capacity.
Beulah: BeU	Slight	Severe: sandy material below a depth of 40 inches; sidewall unstable.	Slight to moderate: high to moderate bearing capacity.
Bowdre: BoU	Severe: perched seasonal high water table; low bearing capacity; high shrink-swell potential.	Severe: somewhat poorly drained; perched seasonal high water table; plastic, clayey material.	Severe: low bearing capacity; high shrink-swell potential.
*Brandon: BrD, BsE For Saffell part of BsE, see Saffell series.	Slight where slopes are less than 8 percent. Moderate where 8 to 15 percent. Severe where more than 15 percent.	Severe: gravelly below a depth of 28 inches; many slopes are more than 15 percent.	Moderate where slopes are less than 15 percent: moderate bearing capacity. Severe where slopes are more than 15 percent.
Calhoun Mapped only in complex with Foley soils.	Severe: poorly drained; perched seasonal high water table.	Severe: poorly drained; perched seasonal high water table.	Severe: poorly drained
Calloway:			
CaA	Severe: perched seasonal high water table.	Severe: somewhat poorly drained; perched seasonal high water table.	Moderate: somewhat poorly drained; moderate bearing capacity.
CaB	Moderate: somewhat poorly drained; moderate bearing strength.	Severe: somewhat poorly drained; perched seasonal high water table.	Moderate: somewhat poorly drained; moderate bearing capacity.
Collins: Co	Severe: subject to occasional flooding.	Severe: subject to occasional flooding.	Moderate: moderate bearing capacity; subject to occasional flooding.
Convent: Cu	Moderate: somewhat poorly drained; moderate bearing capacity.	Severe: somewhat poorly drained; perched seasonal high water table.	Moderate: somewhat poorly drained; moderate bearing capacity.
Dubbs: DbU	Moderate: moderate bearing capacity.	Slight	Moderate: moderate bearing capacity.
Dundee: DdA	Moderate to severe: somewhat poorly drained; perched seasonal high water table; moderate to low bearing capacity; some areas subject to frequent flooding.	Severe: somewhat poorly drained; perched seasonal high water table; some areas subject to frequent flooding.	Moderate to severe: somewhat poorly drained; moderate to low shrink-swell potential; moderate to low bearing capacity; some areas subject to frequent flooding.
Earle: Ec	Severe: low bearing capacity; high shrink-swell potential; perched seasonal high water table.	Severe: somewhat poorly drained; perched seasonal high water table; predominantly clayey material above a depth of 29 inches, loamy material below; sidewalls somewhat unstable.	Severe: low bearing capacity; high shrink-swell potential.
Falaya: Fa	Severe: perched seasonal high water table; subject to occasional flooding.	Severe: somewhat poorly drained; perched seasonal high water table; subject to occasional flooding.	Moderate: somewhat poorly drained; moderate bearing capacity; subject to occasional flooding.
*Foley: Fo For Calhoun part of Fo, see Calhoun series.	Severe: poorly drained; perched seasonal high water table; moderate to low bearing capacity.	Severe: poorly drained; perched seasonal high water table.	Severe: poorly drained; moderate to low bearing capacity.
Grenada: GrB	Moderate: moderate bearing capacity.	Moderate: moderately well drained; perched seasonal high water table.	Moderate: moderate bearing capacity.
Hayti: Ha	Severe: poorly drained; perched seasonal high water table; some areas subject to frequent flooding.	Severe: poorly drained; perched seasonal high water table; some areas subject to frequent flooding.	Severe: poorly drained; some areas subject to frequent flooding.

See footnotes at end of table.

the soils for use in town and country planning

Light industry [1]	Septic-tank absorption fields	Sewage lagoons [2]	Sanitary landfill (trench type) [3]
Severe: poorly drained; perched seasonal high water table; low bearing capacity; high shrink-swell potential.	Severe: very slow permeability; perched seasonal high water table.	Slight	Severe: poorly drained; perched seasonal high water table; plastic, clayey material.
Severe: poorly drained; perched seasonal high water table; low bearing capacity.	Severe: slow permeability; perched seasonal high water table.	Slight	Severe: poorly drained; perched seasonal high water table.
Slight	Slight: severe where a hazard of pollution of ground water exists.	Severe: moderately rapid permeability.	Severe: moderately rapid permeability.
Severe: perched seasonal high water table; low bearing capacity; high shrink-swell potential.	Severe: slow permeability; perched seasonal high water table.	Moderate: irregular surface	Severe: perched seasonal high water table; plastic, clayey material.
Slight where slopes are less than 4 percent. Moderate where 4 to 8 percent. Severe where more than 8 percent.	Slight where slopes are less than 8 percent. Moderate where 8 to 15 percent. Severe where more than 15 percent.	Severe: moderately rapid permeability below a depth of 28 inches; most slopes are more than 7 percent.	Severe: moderately rapid permeability below a depth of 28 inches.
Severe: poorly drained; perched seasonal high water table.	Severe: slow permeability; perched seasonal high water table.	Slight	Severe: poorly drained; perched seasonal high water table.
Severe: perched seasonal high water table.	Severe: slow permeability; perched seasonal high water table.	Slight: fair to good reservoir site material.	Severe: perched seasonal high water table.
Moderate: somewhat poorly drained; moderate bearing strength.	Severe: slow permeability; perched seasonal high water table.	Slight to moderate; fair to good reservoir site material; some slopes more than 2 percent.	Severe: perched seasonal high water table.
Severe: subject to occasional flooding.	Severe: subject to occasional flooding.	Severe: subject to occasional flooding.	Severe: subject to occasional flooding.
Moderate: somewhat poorly drained; moderate bearing capacity.	Severe: perched seasonal high water table.	Moderate: fair reservoir site material; moderate permeability.	Severe: perched seasonal high water table; somewhat poorly drained; moderate permeability.
Moderate: moderate bearing capacity.	Moderate to severe: moderate permeability; perched seasonal water table at a depth of 3 to 5 feet.	Moderate: moderate permeability.	Severe: perched seasonal high water table at a depth of 3 to 5 feet.
Moderate to severe: somewhat poorly drained; perched seasonal high water table; moderate to low bearing capacity; some areas subject to frequent flooding.	Severe: moderately slow permeability; perched seasonal high water table; some areas subject to frequent flooding.	Slight. Severe where subject to frequent flooding.	Severe: perched seasonal high water table; some areas are subject to frequent flooding.
Severe: somewhat poorly drained; low bearing capacity; high shrink-swell potential; perched seasonal high water table.	Severe: very slow permeability in upper 29 inches; perched seasonal high water table.	Slight. Moderate if excavated into loamy material below a depth of 29 inches.	Severe: somewhat poorly drained; perched seasonal high water table; predominantly plastic, clayey material in upper 29 inches, loamy material with moderate permeability below a depth of 29 inches.
Severe: perched seasonal high water table; subject to occasional flooding.	Severe: perched seasonal high water table; subject to occasional flooding.	Severe: subject to occasional flooding.	Severe: perched seasonal high water table; subject to occasional flooding.
Severe: poorly drained; perched seasonal high water table; moderate to low bearing capacity.	Severe: slow permeability; perched seasonal high water table.	Slight to moderate: fair to good reservoir site material.	Severe: poorly drained; perched seasonal high water table.
Moderate: moderate bearing capacity.	Severe: slow permeability	Slight to moderate: fair to good reservoir site material; some slopes are more than 2 percent.	Slight to moderate: perched seasonal high water table for brief periods.
Severe: poorly drained; perched seasonal high water table; some areas subject to frequent flooding.	Severe: slow permeability; perched seasonal high water table; some areas subject to frequent flooding.	Slight. Severe where subject to frequent flooding.	Severe: poorly drained; perched seasonal high water table; some areas subject to frequent flooding.

TABLE 11.—*Degree and kind of limitations of the*

Soil series and map symbols	Dwellings without basements [1]	Shallow excavations	Local roads and streets [1]
Henry: He	Severe: poorly drained; perched seasonal high water table; low bearing capacity.	Severe: poorly drained; perched seasonal high water table.	Severe: poorly drained; low bearing capacity.
Hillemann: Hm	Severe: perched seasonal high water table; low bearing capacity.	Severe: somewhat poorly drained; perched seasonal high water table.	Severe: low bearing capacity
Jackport: Jc	Severe: poorly drained; perched seasonal high water table; low bearing capacity; high shrink-swell potential.	Severe: poorly drained; perched seasonal high water table; predominantly plastic, clayey material.	Severe: poorly drained; low bearing capacity; high shrink-swell potential.
Loring: LgC2, LgD2	Moderate where slopes are less than 15 percent: moderate bearing capacity. Severe where slopes are more than 15 percent.	Slight to moderate where slopes are less than 8 percent; perched seasonal water table at a depth of 2 or 3 feet for brief periods. Moderate where slopes are 8 to 15 percent. Severe where more than 15 percent.	Moderate: moderate bearing capacity.
*Memphis: MeE For Loring part of MeE, see Loring series.	Moderate where slopes are less than 15 percent: moderate bearing capacity. Severe where slopes are more than 15 percent.	Moderate where slopes are less than 15 percent. Severe where more than 15 percent.	Moderate where slopes are less than 15 percent: moderate bearing capacity. Severe where slopes are more than 15 percent.
Mhoon: Mo	Severe: poorly drained; perched seasonal high water table; moderate to low bearing capacity; some areas subject to frequent flooding.	Severe: poorly drained; perched seasonal high water table; some areas subject to frequent flooding.	Severe: poorly drained; moderate to low bearing capacity; some areas subject to frequent flooding.
Saffell Mapped only in complex with Brandon soils.	Moderate where slopes are less than 15 percent. Severe where more than 15 percent.	Severe: gravelly to very gravelly; many slopes are more than 15 percent.	Moderate where slopes are less than 15 percent. Severe where more than 15 percent.
*Sharkey: Sc, Sm, SN For Steele part of Sm, see Steele series.	Severe: poorly drained; perched seasonal high water table; low bearing capacity; high shrink-swell potential; SN subject to frequent flooding.	Severe: poorly drained; perched seasonal high water table; predominantly plastic, clayey material; SN subject to frequent flooding.	Severe: poorly drained; low bearing capacity; high shrink-swell potential; SN subject to frequent flooding.
Steele Mapped only in complex with Sharkey soils.	Severe: perched seasonal high water table; plastic, clayey material below a depth of 26 inches; low bearing capacity; high shrink-swell potential.	Severe: perched seasonal high water table; plastic, clayey material below a depth of 26 inches.	Severe: plastic, clayey material below a depth of 26 inches; low bearing capacity; high shrink-swell potential.
Tichnor: Tc	Severe: poorly drained; perched seasonal high water table; subject to frequent flooding.	Severe: poorly drained; perched seasonal high water table; subject to frequent flooding.	Severe: poorly drained; subject to frequent flooding.
Tunica: TnA, TnU	Severe: poorly drained; perched seasonal high water table; low bearing capacity and high shrink-swell potential in upper 24 inches.	Severe: poorly drained; perched seasonal high water table; plastic, clayey material in upper 24 inches, loamy material below; sidewall somewhat unstable.	Severe: poorly drained; low bearing capacity and high shrink-swell potential in upper 24 inches.

[1] Engineers and others should not apply specific values to estimates given for bearing capacity of soils.
[2] For information about lagoon embankments, see table 9, page 45, in the column "Embankments, dikes, and levees."

frozen only to shallow depths and for short periods, soil formation continues almost the year round.

The climate throughout the county is relatively uniform, though its effect is modified locally by runoff. Climate alone does not account for differences in the soils of the county.

Living organisms

Among the living organisms important in the formation of soils in Poinsett County are bacteria, fungi, insects, and the more highly developed plants and animals. These organisms help to increase the content of organic matter, in-

soils for use in town and country planning—Continued

Light industry [1]	Septic-tank absorption fields	Sewage lagoons [2]	Sanitary landfill (trench type) [3]
Severe: poorly drained; perched seasonal high water table; low bearing capacity.	Severe: slow permeability; perched seasonal high water table.	Slight	Severe: poorly drained; perched seasonal high water table.
Severe: perched seasonal high water table; low bearing capacity.	Severe: very slow permeability; perched seasonal high water table.	Slight	Severe: perched seasonal high water table.
Severe: poorly drained; perched seasonal high water table; low bearing capacity; high shrink-swell potential.	Severe: very slow permeability; perched seasonal high water table.	Slight	Severe: poorly drained; perched seasonal high water table; plastic, clayey material.
Moderate where slopes are less than 8 percent: moderate bearing capacity. Severe where slopes are more than 8 percent.	Severe: moderately slow permeability; perched seasonal water table at a depth of 2 to 3 feet for brief periods; many slopes are more than 15 percent.	Moderate where slopes are less than 7 percent. Severe where more than 7 percent.	Slight to moderate where slopes are less than 15 percent; perched seasonal water table at a depth of 2 to 3 feet for brief periods. Moderate where slopes are 8 to 25 percent. Severe where more than 25 percent.
Severe: slopes	Moderate where slopes are less than 15 percent. Severe where more than 15 percent.	Severe: slopes	Slight where slopes are less than 15 percent. Moderate where 15 to 25 percent. Severe where more than 25 percent.
Severe: poorly drained; perched seasonal high water table; moderate to low bearing capacity; some areas subject to frequent flooding.	Severe: slow permeability; perched seasonal high water table; some areas subject to frequent flooding.	Slight: severe on frequently flooded areas.	Severe: poorly drained; perched seasonal high water table; some areas subject to frequent flooding.
Severe: slopes	Moderate where slopes are less than 15 percent. Severe where more than 15 percent or where there is a hazard of pollution of ground water.	Severe: slopes	Severe: moderately rapid permeability below a depth of 56 inches.
Severe: poorly drained; perched seasonal high water table; low bearing capacity; high shrink-swell potential; SN subject to frequent flooding.	Severe: very slow permeability; perched seasonal high water table; SN subject to frequent flooding.	Slight. Severe on SN; subject to frequent flooding.	Severe: poorly drained; perched seasonal high water table; plastic, clayey material; SN subject to frequent flooding.
Severe: perched seasonal high water table; plastic, clayey material below a depth of 26 inches; low bearing capacity; high shrink-swell potential.	Severe: perched seasonal high water table; slow permeability.	Slight	Severe: perched seasonal high water table; plastic, clayey material below a depth of 26 inches.
Severe: poorly drained; perched seasonal high water table; subject to frequent flooding.	Severe: perched seasonal high water table; slow permeability; subject to frequent flooding.	Severe: subject to frequent flooding.	Severe: poorly drained; perched seasonal high water table; subject to frequent flooding.
Severe: poorly drained; perched seasonal high water table; low bearing capacity and high shrink-swell potential in upper 24 inches.	Severe: perched seasonal high water table; very slow permeability.	Slight on TnA. Moderate on TnU. Moderate to severe if excavated into loamy and sandy material below a depth of 24 inches.	Severe: poorly drained; perched seasonal high water table; plastic, clayey material in upper 24 inches; loamy material with moderate permeability at a depth of 24 to 59 inches; sandy material with moderately rapid permeability below a depth of 59 inches.

[3] Onsite studies of the underlying strata, water tables, and hazards of aquifer pollution and drainage into ground water need to be made for landfills deeper than 6 feet.

crease the supply of nitrogen, diminish or increase the supply of other plant nutrients, and change the structure and porosity of the soils.

Native vegetation has had more influence than animals have had on soil formation in the county. Differences in native vegetation seem to be associated mainly with differences in drainage, and only the major differences are reflected to any extent in soil characteristics.

Pine and hardwood trees originally covered most of the uplands. The most common trees were red oak, white oak, post oak, willow oak, water oak, black walnut, magnolia, hickory, sweetgum, blackgum, ash, and (on Crowley Ridge)

TABLE 12.—*Degree and kind of limitations of the soils for recreational development*

Soil series and map symbols	Camp areas	Playgrounds	Picnic areas	Paths and trails
Alligator: Aa	Severe: poorly drained; perched seasonal high water table; very slow permeability; clayey surface layer; poor trafficability	Severe: poorly drained; perched seasonal high water table; very slow permeability; clayey surface layer; poor trafficability.	Severe: poorly drained; perched seasonal high water table; clayey surface layer; poor trafficability.	Severe: poorly drained; perched seasonal high water table; clayey surface layer; poor trafficability.
Amagon: An	Severe: poorly drained	Severe: poorly drained	Severe: poorly drained	Severe: poorly drained.
Beulah: BeU	Slight	Slight where slopes are 0 to 2 percent. Moderate where more than 2 percent.	Slight	Slight.
Bowdre: BoU	Severe: somewhat poorly drained; perched seasonal high water table; sticky surface layer; poor trafficability.	Severe: somewhat poorly drained; perched seasonal high water table; sticky surface layer; poor trafficability.	Severe: somewhat poorly drained; perched seasonal high water table; sticky surface layer; poor trafficability.	Severe: somewhat poorly drained; perched seasonal high water table; sticky surface layer; poor trafficability.
*Brandon: BrD, BsE. For Saffell part of BsE, see Saffell series.	Slight where slopes are 3 to 8 percent. Moderate where 8 to 15 percent. Severe where more than 15 percent.	Moderate where slopes are 3 to 6 percent. Severe where more than 6 percent.	Slight where slopes are 3 to 8 percent. Moderate where 8 to 15 percent. Severe where more than 15 percent.	Slight where slopes are 3 to 15 percent. Moderate where more than 15 percent.
Calhoun. Mapped only in complex with Foley soils.	Severe: poorly drained; perched seasonal high water table.	Severe: poorly drained; perched seasonal high water table.	Severe: poorly drained; perched seasonal high water table.	Severe: poorly drained; perched seasonal high water table.
Calloway: CaA, CaB	Moderate: somewhat poorly drained; perched seasonal high water table; slow permeability.	Moderate: somewhat poorly drained; perched seasonal high water table; slow permeability.	Moderate: somewhat poorly drained; perched seasonal high water table; some slopes are more than 2 percent.	Moderate: somewhat poorly drained; perched seasonal high water table.
Collins: Co	Severe: subject to occasional flooding.	Moderate: moderately well drained; subject to occasional flooding.	Moderate: moderately well drained; subject to occasional flooding.	Slight.
Convent: Cu	Moderate: somewhat poorly drained; perched seasonal high water table.	Moderate: somewhat poorly drained; perched seasonal high water table.	Moderate: somewhat poorly drained; perched seasonal high water table.	Moderate: somewhat poorly drained; perched seasonal high water table.
Dubbs: DbU	Slight	Slight	Slight	Slight.
Dundee: DdA	Moderate: somewhat poorly drained; perched seasonal high water table; moderately slow permeability.	Moderate: somewhat poorly drained; seasonal high water table; moderately slow permeability.	Moderate: somewhat poorly drained; perched seasonal high water table.	Moderate: somewhat poorly drained; perched seasonal high water table.
Earle: Ec	Severe: somewhat poorly drained; perched seasonal high water table; sticky surface layer; poor trafficability.	Severe: somewhat poorly drained; perched seasonal high water table; sticky surface layer; poor trafficability.	Severe: somewhat poorly drained; perched seasonal high water table; sticky surface layer; poor trafficability.	Severe: somewhat poorly drained; perched seasonal high water table; sticky surface layer; poor trafficability.
Falaya: Fa	Moderate: somewhat poorly drained; perched seasonal high water table; subject to occasional flooding.	Moderate: somewhat poorly drained; seasonal high water table; subject to occasional flooding.	Moderate: somewhat poorly drained; perched seasonal high water table; subject to occasional flooding.	Moderate: somewhat poorly drained; perched seasonal high water table.
*Foley: Fo. For Calhoun part of Fo, see Calhoun series.	Severe: poorly drained; perched seasonal high water table.	Severe: poorly drained; perched seasonal high water table.	Severe: poorly drained; perched seasonal high water table.	Severe: poorly drained; perched seasonal high water table.
Grenada: GrB	Moderate: slow permeability.	Moderate: slow permeability; some slopes are more than 2 percent.	Slight	Slight.
Hayti: Ha	Severe: poorly drained; perched seasonal high water table; some areas subject to frequent flooding.	Severe: poorly drained; perched seasonal high water table; some areas subject to frequent flooding.	Severe: poorly drained; perched seasonal high water table; some areas subject to frequent flooding.	Severe: poorly drained; perched seasonal high water table; some areas subject to frequent flooding.
Henry: He	Severe: poorly drained; perched seasonal high water table.	Severe: poorly drained; perched seasonal high water table.	Severe: poorly drained perched seasonal high water table.	Severe: poorly drained; perched seasonal high water table.

TABLE 12.—*Degree and kind of limitations of the soils for recreational development*—Continued

Soil series and map symbols	Camp areas	Playgrounds	Picnic areas	Paths and trails
Hillemann: Hm	Severe: somewhat poorly drained; perched seasonal high water table.	Severe: somewhat poorly drained; perched seasonal high water table.	Severe: somewhat poorly drained; perched seasonal high water table.	Severe: somewhat poorly drained; perched seasonal high water table.
Jackport: Jc	Severe: poorly drained; perched seasonal high water table; very slow permeability; sticky surface layer; poor trafficability.	Severe: poorly drained; perched seasonal high water table; very slow permeability; sticky surface layer; poor trafficability.	Severe: poorly drained; perched seasonal high water table; sticky surface layer; poor trafficability.	Severe: poorly drained; perched seasonal high water table; sticky surface layer; poor trafficability.
Loring: LgC2, LgD2	Moderate where slopes are 3 to 15 percent; moderately slow permeability. Severe where more than 15 percent.	Moderate where slopes are 3 to 6 percent; moderately slow permeability. Severe where more than 6 percent.	Slight where slopes are 3 to 8 percent. Moderate where 8 to 15 percent. Severe where more than 15 percent.	Slight where slopes are 3 to 15 percent. Moderate where 15 to 25 percent. Severe where more than 25 percent.
*Memphis: MeE For Loring part of MeE, see Loring series.	Moderate where slopes are 12 to 15 percent. Severe where more than 15 percent.	Severe: slopes	Moderate where slopes are 12 to 15 percent. Severe where more than 15 percent.	Slight where slopes are 12 to 15 percent. Moderate where 15 to 25 percent. Severe where more than 25 percent.
Mhoon: Mo	Severe: poorly drained; perched seasonal high water table; some areas subject to frequent flooding.	Severe: poorly drained; perched seasonal high water table; some areas subject to frequent flooding.	Severe: poorly drained; perched seasonal high water table; some areas subject to frequent flooding.	Severe: poorly drained; perched seasonal high water table; some areas subject to frequent flooding.
Saffell Mapped only in complex with Brandon soils.	Moderate where slopes are 12 to 15 percent; coarse fragments. Severe where more than 15 percent.	Severe: coarse fragments; slopes.	Moderate where slopes are 12 to 15 percent; coarse fragments. Severe where more than 15 percent.	Moderate: coarse fragments; most slopes are more than 15 percent.
*Sharkey: Sc, Sm, SN For Steele part of Sm, see Steele series.	Severe: poorly drained; perched seasonal high water table; predominantly clayey surface layer; poor trafficability; SN subject to frequent flooding.	Severe: poorly drained; perched seasonal high water table; predominantly clayey surface layer; poor trafficability; SN subject to frequent flooding.	Severe: poorly drained; perched seasonal high water table; predominantly clayey surface layer; poor trafficability; SN subject to frequent flooding.	Severe: poorly drained; perched seasonal high water table; clayey surface layer; poor trafficability; SN subject to frequent flooding.
Steele Mapped only in complex with Sharkey soils.	Severe: perched seasonal high water table; predominantly sandy surface; fair to poor trafficability.	Severe: perched seasonal high water table; predominantly sandy surface; fair to poor trafficability.	Severe: perched seasonal high water table; predominantly sandy surface; fair to poor trafficability.	Severe: perched seasonal high water table; predominantly sandy surface; fair to poor trafficability.
Tichnor: Tc	Severe: poorly drained; perched seasonal high water table; subject to frequent flooding.	Severe: poorly drained; perched seasonal high water table; subject to frequent flooding.	Severe: poorly drained; perched seasonal high water table; subject to frequent flooding.	Severe: poorly drained; perched seasonal high water table; subject to frequent flooding.
Tunica: TnA, TnU	Severe: poorly drained; perched seasonal high water table; clayey surface layer; poor trafficability.	Severe: poorly drained; perched seasonal high water table; clayey surface layer; poor trafficability.	Severe: poorly drained; perched seasonal high water table; clayey surface layer; poor trafficability.	Severe: poorly drained; perched seasonal high water table; clayey surface layer; poor trafficability.

yellow-poplar and shortleaf pine. Brandon, Loring, Memphis, and Saffell soils formed in the steeper, better drained areas, and such soils as Calloway and Henry formed in the more nearly level areas. In the small scattered areas of prairie in the western part of the county, the soils were covered by scattered hardwood trees and dense stands of big bluestem, little bluestem, indiangrass, eastern gamagrass, and other tall bunch grasses.

On bottom lands the cover was dense forest and a few canebreaks. Heavy stands of baldcypress grew in swampy areas. In swales and other low and wet but not swampy places, where Alligator, Earle, Sharkey, and Tunica soils formed, the principal trees were water tupelo, sweetgum, soft elm, green ash, hackberry, cottonwood, overcup oak, and willow oak. Canebreaks covered many of the border flats among the swamps and sloughs and bayous where the Bowdre and Dundee soils formed. Stands of hardwoods covered most of the better drained areas and many of the wetter areas. Amagon soils formed in the low, wet depressions, and Dundee and Dubbs soils in the better drained places. On low ridges the trees were chiefly hickory, pecan, white oak, red oak, blackgum, and winged elm.

Man is influencing soil formation in the county by farming. By clearing forests, cultivating soils, introducing new kinds of plants, controlling floods, and improving drainage, he is drastically changing the complex community of orga-

nisms affecting soil formation. Only a few results of these activities can be seen now; some will probably not be evident for many centuries.

Parent material

The parent material of the soils in the eastern part of the county is chiefly alluvium deposited on the flood plains of the Mississippi and Ohio Rivers when they meandered in separate channels across this area (*6*). This alluvium, 100 to 180 feet thick, is a mixture of mineral derived from many kinds of soil, rock, and unconsolidated material, including glacial drift and loess. It washed downstream from the upper reaches of the Mississippi River Basin, and it has been reworked, in part by the St. Francis and Tyronza Rivers. The sandy material that was deposited parallel to and near the stream channel makes up the natural levees on which Beulah and Dubbs soils formed. The clayey material that settled out some distance away from the channel on the lowest parts of the flood plains is the material in which Alligator, Earle, Sharkey, and Tunica soils formed.

In the area of the Sharkey-Steele complex, the Steele soils are a result of sand filling fractures caused by the New Madrid earthquake of 1811–12 (*7*).

The parent material of a small acreage of soils on the western edge of the bottom lands consists of sediments washed down by minor streams from loessial uplands.

The parent material of most of the soils on Crowley Ridge and on the plains to the west consists of loess. This material was originally part of the glacial drift in the northern part of the Mississippi River Basin. These drift materials were first washed downstream. Then, during dry periods, the wind blew the silt-size materials out of the streambeds and deposited them at higher elevations (*6*). Generally the mantle of loess was thick enough for the solum of the various soils to form almost entirely within the mantle.

On Crowley Ridge the mantle of loess is 2 to 15 or more feet thick over the sandy and gravelly material that makes up the core of the ridge. In areas of the Saffell soils, the sandy and gravelly material is exposed at the surface.

On the plains west of Crowley Ridge, the loess is underlain by alluvium deposited in channels and on terraces by the Mississippi River before the river changed its course to flow east of the ridge. Grenada soils formed in the thick mantle of loess on some of the older terraces in this area.

Relief

On the flood plains in the eastern part of Poinsett County, relief is characterized by flat areas and successions of very gently undulating ridges and swales. Local differences in elevation are commonly less than 8 feet. Slopes are less than 3 percent in most places, but they are as much as 15 percent on a few streambanks.

Crowley Ridge, which occupies about 6 percent of the county, is 1½ to 3½ miles wide. It is made up of narrow ridges that have steep, short slopes between the ridgetops and the valley streams. The relief ranges from gently sloping to steep.

West of Crowley Ridge are wide loessial plains, which make up about 29 percent of the county. These plains consist of wide, poorly drained, level areas and low, gently sloping ridges.

Elevation ranges from about 140 feet above sea level where the St. Francis River crosses the southern boundary of the county to about 400 feet on Crowley Ridge near Harrisburg.

Time

The length of time required for formation of a soil depends largely upon other factors of soil formation. Less time generally is required if the parent material is coarse textured, the climate is warm and humid, and the vegetation is luxuriant. It is probable that the sediments now forming most of the land surface in Poinsett County were deposited during and after the advances of the Wisconsin Glaciers, the last of which was retreating from the North-Central States about 11,000 years ago.

The ages of the soils in the county vary widely. In the smoother part of the uplands, the soils are nearly mature; but on the stronger slopes where geologic erosion has more nearly kept pace with soil formation, the soils have less thick and less strongly developed horizons. On first bottoms and in areas of local alluvium, the soil material has been in place too short a time to allow the formation of mature soils. Some areas receive fresh sediments at frequent intervals. Collins and Falaya soils are in these areas.

Processes of Soil Formation

In this subsection a brief definition of the horizon nomenclature and processes responsible for soil formation are given.

The marks that the soil-forming factors leave on the soil are recorded in the soil profile, which is a succession of layers, or horizons, from the surface to the parent rock. The horizons differ in one or more of such properties as color, texture, structure, consistence, and porosity.

Most soil profiles contain three major horizons, called A, B, and C. Very young soils do not have a B horizon.

The A horizon can be the horizon of maximum accumulation of organic matter called the A1 horizon, or surface layer; or it can be the horizon of maximum leaching of dissolved or suspended materials called the A2, or subsurface layer.

The B horizon lies immediately beneath the A horizon and is sometimes called the subsoil. It is a horizon of maximum accumulation of suspended materials, such as clay and iron. Commonly, the B horizon has blocky structure and is firmer than the horizons immediately above and below it.

Beneath the B is the C horizon, which has been little affected by the soil-forming processes. The C horizon, however, can be materially modified by weathering. In some young soils, the C horizon is immediately beneath the A horizon and has been slightly modified by living organisms as well as by weathering.

Several processes have been active in the development of soil horizons in the soils of Poinsett County. Among these are the accumulation of organic matter, the leaching of calcium carbonates and bases, the reduction and transfer of iron, and the formation and translocation of silicate clay minerals. In most soils of the county, more than one of these processes has been active in soil formation.

Accumulation of organic matter in the upper part of the profile to form an A1 horizon has been an important process in soil formation. Most of the soils of Poinsett County range from medium to low in content of organic matter.

Leaching of carbonates and bases has occurred in nearly all of the soils in Poinsett County. Among soil scientists,

it is generally accepted that bases are leached downward in soils before silicate clay minerals begin to move. Most of the soils in the county are moderately leached, an important factor in horizon development.

Oxidation of iron is evident in the moderately well drained and well drained soils in the county. It is indicated by the red and brown colors in the B horizon of Brandon, Loring, Memphis, and Saffell soils.

Reduction and transfer of iron has occurred in the poorly drained and somewhat poorly drained soils of the county. In the naturally wet soils, this process is called gleying. Gray colors in the subsurface layer indicate the reduction and loss of iron. Some horizons contain brown mottles and concretions caused by segregated iron. Gleying is most pronounced in the Alligator, Sharkey, and Henry soils.

In most soils of Poinsett County, the translocation of clay minerals has contributed to horizon development. In many places the eluviated A2 horizon has been destroyed by cultivation, but in areas where an A2 horizon occurs, its structure is blocky to platy; clay content is less than in the lower horizons; and the soil is lighter in color. Generally, clay films have accumulated in pores and on ped faces in the B horizon. The soils were probably leached of carbonates and soluble salts to a great extent before translocation of silicate clay occurred, even though content of bases is still high in all soils of the county.

Leaching of bases and translocation of silicate clay are among the most important processes in horizon differentiation in the soils of Poinsett County.

Classification of Soils

Soils are classified so that we can more easily remember their significant characteristics. Classification enables us to assemble knowledge about the soils, to see their relationship to one another and to the whole environment, and to develop principles that help us to understand their behavior and their response to manipulation. First through classification, and then through use of soil maps, we can apply our knowledge of soils to specific fields and other tracts of land.

The narrow categories of classification, such as those used in detailed soil surveys, allow us to organize and apply knowledge about soils in managing farms, fields, and woodlands; in developing rural areas; in engineering work; and in many other ways. Soils are placed in broad classes to facilitate study and comparison in large areas, such as countries and continents.

The system of soil classification currently used was adopted by the National Cooperative Soil Survey in 1965 (*10*). Because this sytem is under continual study, readers interested in developments of the current system should search to the latest literature available (*12*).

The current system of classification has six categories. Beginning with the broadest, these categories are order, suborder, great group, subgroup, family, and series. In this system the criteria used as a basis for classification are soil properties that are observable and measurable. The properties are chosen, however, so that the soils of similar genesis, or mode of origin, are grouped. In table 13 the soil series of Poinsett County are placed in 4 categories of the current system. Classes of the current system are briefly defined in the following paragraphs.

ORDER. Ten soil orders are recognized. The properties used to differentiate among soil orders are those that tend to give broad climatic groupings of soils. The two exceptions to this are the Entisols and Histosols, which occur in many different climates.

SUBORDER. Each order is subdivided into suborders that are based primarily on those soil characteristics that seem to produce classes with the greatest genetic similarity. The suborders narrow the broad climatic range permitted in

TABLE 13.—*Classification of soil series*

Series	Family	Subgroup	Order
Alligator	Very-fine, montmorillonitic, acid, thermic	Vertic Haplaquepts	Inceptisols.
Amagon	Fine-silty, mixed, thermic	Typic Ochraqualfs	Alfisols.
Beulah	Coarse-loamy, mixed, thermic	Typic Dystrochrepts	Inceptisols.
Bowdre	Clayey over loamy, mixed, thermic	Fluvaquentic Hapludolls	Mollisols.
Brandon	Fine-silty, mixed, thermic	Typic Glossaqualfs	Ultisols.
Calhoun	Fine-silty, mixed, thermic	Typic Glossudalfs	Alfisols.
Calloway	Fine-silty, mixed, thermic	Glossaquic Fragiudalfs	Alfisols.
Collins	Coarse-silty, mixed, acid, thermic	Aquic Udifluvents	Entisols.
Convent	Coarse-silty, mixed, nonacid, thermic	Aeric Fluvaquents	Entisols.
Dubbs	Fine-silty, mixed, thermic	Typic Hapludalfs	Alfisols.
Dundee	Fine-silty, mixed, thermic	Aeric Ochraqualfs	Alfisols.
Earle	Clayey over loamy, montmorillonitic, acid, thermic	Vertic Haplaquepts	Inceptisols.
Falaya	Coarse-silty, mixed, acid, thermic	Aeric Fluvaquents	Entisols.
Foley	Fine-silty, mixed, thermic	Albic Glossic Natraqualfs	Alfisols.
Grenada	Fine-silty, mixed, thermic	Glossic Fragiudalfs	Alfisols.
Hayti	Fine-silty, mixed, nonacid, thermic	Typic Fluvaquents	Entisols.
Henry	Coarse-silty, mixed, thermic	Typic Fragiaqualfs	Alfisols.
Hillemann	Fine-silty, mixed, thermic	Albic Glossic Natraqualfs	Alfisols.
Jackport	Very-fine, montmorillonitic, thermic	Vertic Ochraqualfs	Alfisols.
Loring	Fine-silty, mixed, thermic	Typic Fragiudalfs	Alfisols.
Memphis	Fine-silty, mixed, thermic	Typic Hapludalfs	Alfisols.
Mhoon	Fine-silty, mixed, nonacid, thermic	Typic Fluvaquents	Entisols.
Saffell	Loamy-skeletal, siliceous, thermic	Typic Hapludults	Ultisols.
Sharkey	Very-fine, montmorillonitic, nonacid, thermic	Vertic Haplaquepts	Inceptisols.
Steele	Sandy over clayey, mixed, nonacid, thermic	Aquic Udifluvents	Entisols.
Tichnor	Fine-silty, mixed, thermic	Typic Ochraqualfs	Alfisols.
Tunica	Clayey over loamy, montmorillonitic, nonacid, thermic.	Vertic Haplaquepts	Inceptisols.

the orders. The soil properties used to separate suborders are mainly those that reflect either the presence or absence of waterlogging, or soil differences resulting from the climate or vegetation.

GREAT GROUP. Soil suborders are separated into great groups on the basis of uniformity in the kinds and sequence of major soil horizons and features. The horizons used to make separations are those in which clay, iron, or humus have accumulated; those that have pans that interfere with growth of roots, movement of water, or both; and thick, dark-colored surface horizons. The features used are the self-mulching properties of clay, soil temperature, major differences in chemical composition (mainly calcium, magnesium, sodium, and potassium), dark-red and dark-brown colors associated with basic rocks, and the like.

SUBGROUP. Great groups are subdivided into subgroups, one representing the central (typic) segment of the group, and others called intergrades that have properties of the group and also one or more properties of another great group, suborder, or order. Subgroups may also be made in those instances where soils properties intergrade outside of the range of any other great group, suborder, or order.

FAMILY. Soil families are separated within a subgroup primarily on the basis of properties important to the growth of plants or on the behavior of soils when used for engineering. Among the properties considered are texture, mineralogy, reactions, soil temperature, permeability, thickness of horizons, and consistence.

Physical and Chemical Analyses

Physical and chemical data resulting from laboratory analyses can be useful to the soil scientist in classifying soils. These data are helpful in estimating available water capacity, acidity, cation exchange capacity, mineralogical composition, organic-matter content, and other soil characteristics that affect management needs. The data are also helpful in developing concepts of soil formation. More recently, laboratory data have proved helpful in rating soils for nonfarm uses; that is, for residential, industrial, recreational, or transportational use.

Several factors are involved in selecting soils for laboratory analyses. Soils that are extensive and most important in the survey area are considered first. A review of available laboratory data is made to determine the need for additional information on these particular soils. Generally, priority is given to soils for which little or no laboratory data are available.

In Poinsett County soils representing 4 soil series were selected for laboratory analyses. Profiles of these soils are described in the section "Descriptions of the Soils." The analyses were made by the University of Arkansas, in Fayetteville. Table 14 shows the results.

Silt and clay particle size distribution was determined by the hydrometer method (*5*). Sands were measured by sieving (*11*).

Content of organic matter was determined by a modified

TABLE 14.—*Physical and chemical*

[Analyses made by the University of Arkansas, Fayetteville, Arkansas. Absence of data

Soil	Sample number	Depth from surface	Horizon	Particle-size distribution (percent less than 2.0 mm)			
				Very coarse through medium sand (2.0–0.25 mm)	Fine sand (0.25–0.1 mm)	Very fine sand (0.1–0.05 mm)	Total sand (2.0–0.05 mm)
		Inches					
Calloway silt loam	S69-Ark-56-6	0–5	Ap1	2	3	3	8
		5–8	Ap2	2	3	3	8
		8–19	B2	2	3	3	8
		19–32	A'2	1	3	2	6
		32–50	B'x1	2	3	2	7
		50–68	B'x2	2	3	3	8
Henry silt loam	S69-Ark-56-4	0–6	Ap	----------	1	2	3
		6–20	A21g	----------	1	2	3
		20–28	Bx1	----------	1	1	2
		28–45	Bx2	----------	1	2	3
		45–61	B3g	----------	1	2	3
		61–72	C	----------	2	3	5
Hillemann silt loam	S69-Ark-56-2	0–6	Ap	2	1	4	7
		6–14	A2g	3	1	4	8
		14–26	B21tg	1	1	2	4
		26–33	B22tg	1	1	2	4
		33–53	B23tg	1	1	3	5
		53–63	B31g	1	1	4	6
		63–75	B32g	----------	1	1	2
Memphis silt loam	S70-Ark-56-1	0–3	A1	----------	1	1	2
		3–10	A2	----------	1	1	2
		10–25	B21t	----------	----------	1	1
		25–43	B22t	----------	----------	----------	----------
		43–57	B3t	----------	----------	----------	----------
		57–74	C	----------	----------	1	1

Wakley-Black method (*8*). The organic matter is digested with potassium dichromate-sulfuric acid, and the quantity of chromic acid reduced is measured colorimetrically.

Soil pH was determined on 1:1 soil to water mixture. Available phosphorous was extracted with the Bray No. 1 solution (0.03*N* NH_4F and 0.025*N* HCl) and measured colorimetrically.

The bases were extracted with 1*N*, pH 7.0, ammonium acetate. Calcium, potassium, and sodium were determined with a flame-photometer, and magnesium was measured by atomic absorption. The extractable acidity was determined by the barium chloride-triethanolamine method (*11*).

The total of extractable calcium, potassium, magnesium, sodium, and extractable acidity is an approximation of the cation exchange capacity of the soil. Except in soils that contain soluble salts, base saturation was determined by dividing this total into the sum of calcium, potassium, magnesium, and sodium, and multiplying by 100.

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Glossary

This glossary defines those terms most frequently needed in soil survey reports. It can be used to check glossaries prepared by authors, or to compile a glossary at an author's request. If additional definitions are really necessary, you can obtain them from the Desk Glossary or from the Yearbooks of Agriculture and other references in the Editorial Section. Generally, authors who compile their own glossaries provide more definitions than are needed.

analyses of selected soils

indicates that analysis was not made or data resulting from the analysis were insignificant]

Particle-size distribution (percent less than 2.0 mm) –*Continued*		Chemical analysis							
Silt (0.05-0.002 mm)	Clay (<0.002 mm)	Exchangeable bases (Milliequivalents per 100 grams of soil)				Extractable acidity	Base saturation	Reaction (1:1 soil-water ratio)	Organic matter
		Calcium	Magnesium	Sodium	Potassium				
						Meq/100 g of soil	*Percent*	*pH*	*Percent*
79	13	5.1	1.3	0.2	0.2	4.9	58	6.1	1.9
78	14	5.2	1.2	0.4	0.1	5.3	57	6.3	1.7
74	18	2.5	0.9	0.4	0.1	10.8	27	5.1	0.6
76	18	0.9	0.6	0.5	0.1	10.8	16	5.2	0.4
66	27	1.1	2.1	1.8	0.2	13.8	27	5.5	0.3
67	25	3.3	3.6	3.1	0.2	7.5	58	5.4	0.3
82	15	5.8	1.2	0.2	0.3	2.6	74	6.8	1.7
83	14	3.6	1.3	0.4	0.2	3.2	63	5.3	0.8
74	24	3.3	1.5	0.8	0.2	9.1	39	4.7	0.5
71	26	3.7	2.3	1.6	0.2	10.5	43	4.8	0.4
68	29	5.1	3.7	2.5	0.2	8.9	56	5.3	0.3
76	19	4.4	3.1	2.3	0.2	4.7	68	5.8	0.2
80	13	8.7	1.4	0.4	0.1	2.9	79	7.7	2.0
76	16	4.9	0.8	0.5	0.1	2.9	68	7.6	0.8
62	34	2.6	1.8	2.8	0.2	12.3	38	5.6	0.6
65	31	3.3	3.3	5.0	0.2	8.9	57	5.7	0.6
64	31	4.0	3.9	6.2	0.2	5.1	74	6.2	0.3
60	34	5.4	5.1	7.0	0.2	5.7	76	7.2	0.2
61	37	6.3	5.6	7.3	0.2	3.4	85	7.4	0.2
80	18	1.6	0.9	0.1	0.3	10.8	21	4.8	2.3
78	20	0.9	0.8	0.1	0.2	12.7	14	4.7	1.4
74	25	4.5	2.1	0.3	0.2	6.6	52	5.3	0.4
61	39	7.9	3.4	0.7	0.2	6.7	65	5.5	0.4
61	39	7.5	3.3	1.0	0.2	6.6	65	5.5	0.4
73	26	6.0	2.5	1.1	0.2	4.4	69	6.0	0.3

ABC soil. A soil that has a complete profile, including an A, B, and C horizon.

AC soil. A soil that has an A horizon and a C horizon but no B horizon. Commonly such soils are immature, as those developing from alluvium or those on steep, rocky slopes.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as crumbs, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alluvium. Soil material, such as sand, silt, or clay, that has been deposited on land by streams.

Association, soil. A group of soils geographically associated in a characteristic repeating pattern.

Available water capacity (also termed available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil.

Base saturation. The degree to which material that has base-exchange properties is saturated with exchangeable cations other than hydrogen, expressed as a percentage of the cation-exchange capacity.

Calcareous soil. A soil containing enough calcium carbonate (often with magnesium carbonate) to effervesce (fizz) visibly when treated with cold, dilute hydrochloric acid.

Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Chiseling. Tillage of soil with an implement having one or more soil-penetrating points that loosen the subsoil and bring *clods* to the surface. A form of emerging tillage to control soil blowing.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay film. A thin coating of clay on the surface of a soil aggregate. Synonyms: clay coat, clay skin.

Complex, soil. A mapping unit consisting of different kinds of soils that occur in such small individual areas or in such an intricate pattern that they cannot be shown separately on a publishable soil map.

Concretions. Grains, pellets, or nodules of various sizes, shapes, and colors consisting of concentrations of compounds, or of soil grains cemented together. The composition of some concretions is unlike that of the surrounding soil. Calcium carbonate and iron oxide are examples of material commonly found in concretions.

Consistence, soil. The feel of the soil and the ease with which a lump can be crushed by the fingers. Terms commonly used to describe consistence are—

Loose.—Noncoherent when dry or moist; does not hold together in a mass.

Friable.—When moist, crushes easily under gentle pressure between thumb and forefinger and can be pressed together into a lump.

Firm.—When moist, crushes under moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.

Plastic.—When wet, readily deformed by moderate pressure but can be pressed into a lump; will form a "wire" when rolled between thumb and forefinger.

Sticky.—When wet, adheres to other material, and tends to stretch somewhat and pull apart, rather than to pull free from other material.

Hard.—When dry, moderately resistant to pressure; can be broken with difficulty between thumb and forefinger.

Soft.—When dry, breaks into powder or individual grains under very slight pressure.

Cemented.—Hard and brittle; little affected by moistening.

Drainage class (natural). Refers to the conditions of frequency and duration of periods of saturation or partial saturation that existed during the development of the soil, as opposed to altered drainage, which is commonly the result of artificial drainage or irrigation but may be caused by the sudden deepening of channels or the blocking of drainage outlets. Seven different classes of natural soil drainage are recognized.

Excessively drained soils are commonly very porous and rapidly permeable and have a low available water capacity.

Somewhat excessively drained soils are also very permeable and are free from mottling throughout their profile.

Well-drained soils are nearly free from mottling and are commonly of intermediate texture.

Moderately well drained soils commonly have a slowly permeable layer in or immediately beneath the solum. They have uniform color in the A and upper B horizons and mottling in the lower B and the C horizons.

Somewhat poorly drained soils are wet for significant periods but not all the time, and some soils commonly have mottling at a depth below 6 to 16 inches.

Poorly drained soils are wet for long periods and are light gray and generally mottled from the surface downward, although mottling may be absent or nearly so in some soils.

Very poorly drained soils are wet nearly all the time. They have a dark-gray or black surface layer and are gray or light gray, with or without mottling, in the deeper parts of the profile.

Diversion, or diversion terrace. A ridge of earth, generally a terrace, that is built to divert runoff from its natural course and, thus, to protect areas downslope from the effects of such runoff.

Eolian soil material. Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.

Erosion. The wearing away of the land surface by wind (sandblast), running water, and other geological agents.

Fertility, soil. The quality of a soil that enables it to provide compounds, in adequate amounts and in proper balance, for the growth of specified plants, when other growth factors such as light, moisture, temperature, and the physical condition of the soil are favorable.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the oven-dry weight, after the gravitational, or free, water has been allowed to drain away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity.*

Flood plain. Nearly level land, consisting of stream sediments, that borders a stream and is subject to flooding unless protected artificially.

Fragipan. A loamy, brittle, subsurface horizon that is very low in organic-matter content and clay but is rich in silt or very fine sand. The layer is seemingly cemented. When dry, it is hard or very hard and has a high bulk density in comparison with the horizon or horizons above it. When moist, the fragipan tends to rupture suddenly if pressure is applied, rather than to deform slowly. The layer is generally mottled, is slowly or very slolwly permeable to water, and has few or many bleached fracture planes that form polygons. Fragipans are a few inches to several feet thick; they generally occur below the B horizon, 15 to 40 inches below the surface.

Genesis, soil. The manner in which a soil originates. Refers especially to the processes initiated by climate and organisms that are responsible for the development of the solum, or true soil, from the unconsolidated parent material, as conditioned by relief and age of landform.

Gleization. The reduction, translocation, and segregation of soil compounds, notably of iron, usually in the lower horizons, as a result of waterlogging with poor aeration and drainage; expressed in the soil by mottled colors dominated by gray. The soil-forming processes leading to the development of a gley soil.

Gleyed soil. A soil in which waterlogging and lack of oxygen have caused the material in one or more horizons to be neutral gray in color. The term "gleyed" is applied to soil horizons with yellow and gray mottling caused by intermittent waterlogging.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rains. The distinction between gully and rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by normal tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage. V-shaped gullies result if the material is more difficult to erode with depth; whereas U-shaped gullies result if the lower material is more easily eroded than that above it.

Horizon, soil. A layer of soil, approximately parallel to the surface, that has distinct characteristics produced by soil-forming processes. These are the major horizons:

O horizon.—The layer of organic matter on the surface of a mineral soil. This layer consists of decaying plant residues.

A horizon.—The mineral horizon at the surface or just below an O horizon. This horizon is the one in which living organisms are most active and therefore is marked by the accumulation of humus. The horizon may have lost one or more of soluble salts, clay, and sesquioxides (iron and aluminum oxides).

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of change from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics caused (1) by accumulation of clay, sesquioxides, humus, or some combination of these; (2) by prismatic or blocky structure; (3) by redder or stronger colors than the A horizon; or (4) by some combination of these. Combined A and B horizons are usually called the solum, or true soil. If a soil lacks a B horizon, the A horizon alone is the solum.

C horizon.—The weathered rock material immediately beneath the solum. In most soils this material is presumed to be like that from

which the overlying horizons were formed. If the material is known to be different from that in the solum, a Roman numeral precedes the letter C.

R layer.—Consolidated rock beneath the soil. The rock usually underlies a C horizon but may be immediately beneath an A or B horizon.

Humus. The well-decomposed, more or less stable part of the organic matter in mineral soils.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are—

Border.—Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.

Basin.—Water is applied rapidly to relatively level plots surrounded by levees or dikes.

Controlled flooding.—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation.—Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops, or in orchards, to confine the flow of water to one direction.

Furrow.—Water is applied in small ditches made by cultivation implements used for tree and row crops.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation.—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Wild flooding.—Irrigation water, released at high points, flows onto the field without controlled distribution.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state. In engineering, a high liquid limit indicates that the soil has a high content of clay and a low capacity for supporting loads.

Loess. Fine-grained material, dominantly of silt-sized particles, that has been deposited by wind.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and their thickness and arrangement in the soil profile.

Mottling, soil. Irregularly marked with spots of different colors that vary in number and size. Mottling in soils usually indicates poor aeration and lack of drainage. Descriptive terms are as follows: abundance—*few, common,* and *many*; size—*fine, medium,* and *coarse*; and contrast—*faint, distinct,* and *prominent.* The size measurements are these: *fine,* less than 5 millimeters (about 0.2 inch) in diameter along the greatest dimension; *medium,* ranging from 5 millimeters to 15 millimeters (about 0.2 to 0.6 inch) in diameter along the greatest dimension; and *coarse,* more than 15 millimeters (about 0.6 inch) in diameter along the greatest dimension.

Munsell notation. A system for designating color by degrees of the three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with a hue of 10YR, a value of 6, and a chroma of 4.

Parent material. Disintegrated and partly weathered rock from which soil has formed.

Percolation. The downward movement of water through the soil.

Ped. An individual natural soil aggregate, such as a crumb, a prism, or a block, in contrast to a clod.

Permeability. The quality that enables the soil to transmit water or air. Terms used to describe permeability are as follows: *very slow, slow, moderately slow, moderate, moderately rapid, rapid,* and *very rapid.*

Phase, soil. A subdivision of a soil, series, or other unit in the soil classification system made because of differences in the soil that affect its management but do not affect its classification in the natural landscape. A soil series, for example, may be divided into phases because of differences in slope, stoniness, thickness, or some other characteristic that affects its management but not its behavior in the natural landscape.

pH value. A numerical means for designating acidity and alkalinity in soils. A pH value of 7.0 indicates precise neutrality, a higher value, alkalinity; and a lower value, acidity.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from a semisolid to a plastic state.

Plowpan. A compacted layer formed in the soil immediately below the plowed layer.

Poorly graded. A soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles in poorly graded soil material, density can be increased only slightly by compaction.

Profile, soil. A vertical section of the soil through all its horizons and extending into the parent material.

Reaction, soil. The degree of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is precisely neutral in reaction because it is neither acid nor alkaline. An acid, or "sour," soil is one that gives an acid reaction; an alkaline soil is one that is alkaline in reaction. In words, the degrees of acidity or alkalinity are expressed thus:

	pH		*pH*
Extremely acid	Below 4.5	Neutral	6.6 to 7.3
Very strongly acid	4.5 to 5.0	Mildly alkaline	7.4 to 7.8
Strongly acid	5.1 to 5.5	Moderately alkaline	7.9 to 8.4
Medium acid	5.6 to 6.0	Strongly alkaline	8.5 to 9.0
Slightly acid	6.1 to 6.5	Very strongly alkaline	9.1 and higher.

Regolith. The unconsolidated mantle of weathered rock and soil material on the earth's surface; the loose earth material above the solid rock. Only the upper part of this, modified by organisms and other soil-building forces, is regarded by soil scientists as soil. Most American engineers speak of the whole regolith, even to great depths, as "soil."

Relief. The elevations or inequalities of a land surface, considered collectively.

Rill. A steep-sided channel resulting from accelerated erosion. A rill normally is a few inches in depth and width and is not large enough to be an obstacle to farm machinery.

Sand. Individual rock or mineral fragments in a soil that range in diameter from 0.05 to 2.0 millimeters. Most sand grains consist of quartz, but they may be of any mineral composition. The textural class name of any soil that contains 85 percent or more sand and not more than 10 percent clay.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. If two sequa are present in a single soil profile, it is said to have a bisequum.

Series, soil. A group of soils developed from a particular type of parent material and having genetic horizons that, except for texture of the surface layer, are similar in differentiating characteristics and in arrangement in the profile.

Silica. Silica is a combination of silicon and oxygen. The mineral form is called quartz.

Silt. Individual mineral particles in a soil that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). Soil of the silt textural class is 80 percent or more silt and less than 12 percent clay.

Site index. A numerical means of expressing the quality of a forest site that is based on the height of the dominant stand at an arbitrarily chosen age; for example, the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years.

Slickensides. Polished and grooved surfaces produced by one mass sliding past another. In soils, slickensides may occur at the bases of slip surfaces on relatively steep slopes and in swelling clays, where there is marked change in moisture content.

Soil. A natural, three-dimensional body on the earth's surface that supports plants and that has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes of separates recognized in the United States are as follows: *Very coarse sand* (2.0 to 1.0 millimeter); *coarse sand* (1.0 to 0.5 millimeter); *medium sand* (0.5 to 0.25 millimeter); *fine sand* (0.25 to 0.10 millimeter); *very fine sand* (0.10 to 0.05 millimeter); *silt* (0.05 to 0.002 millimeter); and *clay* (less than 0.002 millimeter). The separates recognized by the International Society of Soil Science are as follows: I (2.0 to 0.2 millimeter); II (0.2 to 0.02 millimeter); III (0.02 to 0.002 millimeter); IV (less than 0.002 millimeter).

Solum. The upper part of a soil profile, above the parent material, in which the processes of soil formation are active. The solum in mature soil includes the A and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the underlying material. The living roots and other plant and animal life characteristic of the soil are largely confined to the solum.

Structure, soil. The arrangement of primary soil particles into compound particles or clusters that are separated from adjoining aggregates and have properties unlike those of an equal mass of unaggregated primary soil particles. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular. Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the par-

ticles adhering together without any regular cleavage, as in many claypans and hardpans).

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tillage of a soil below normal depth ordinarily to shatter a hardpan or claypan.

Substratum. Technically, the part of the soil below the solum.

Surface soil. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, about 5 to 8 inches in thickness. The plowed layer.

Terrace. An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that it may soak into the soil or flow slowly to a prepared outlet without harm. Terraces in fields are generally built so they can be farmed. Terraces intended mainly for drainage have a deep channel that is maintained in permanent sod.

Terrace (geological). An old alluvial plain, ordinarily flat or undulating, bordering a river, lake, or the sea. Stream terraces are frequently called second bottoms, as contrasted to flood plains, and are seldom subject to overflow. Marine terraces were deposited by the sea and are generally wide.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay.* The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Tilth, soil. The condition of the soil in relation to the growth of plants, especially soil structure. Good tilth refers to the friable state and is associated with high noncapillary porosity and stable, granular structure. A soil in poor tilth is nonfriable, hard, nonaggregated, and difficult to till.

Topsoil. A presumed fertile soil or soil material, or one that responds to fertilization, ordinarily rich in organic matter, used to topdress roadbanks, lawns, and gardens.

Type, soil. A subdivision of the soil series that is made on the basis of differences in the texture of the surface layer.

Water table. The highest part of the soil or underlying rock material that is wholly saturated with water. In some places an upper, or perched, water table may be separated from a lower one by a dry zone.

Well-graded soil. A soil or soil material consisting of particles that are well distributed over a wide range in size or diameter. Such a soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an oven-dry basis, at which plants (specifically sunflower) wilt so much that they do not recover when placed in a dark, humid atmosphere.

GUIDE TO MAPPING UNITS

For a full description of a mapping unit, read both the description of the mapping unit and that of the soil series to which the mapping unit belongs. The suitability of the soils for crop and pasture is discussed in the soil descriptions. For information about the capability grouping, refer to page 28. For information about the suitability of the soils as woodland or for wildlife habitat, read the introduction to that section and refer to the table in each section.

Map symbol	Mapping unit	Page	Capability unit	Woodland group
			Symbol	Symbol
Aa	Alligator clay	8	IIIw-1	2w6
An	Amagon silt loam	9	IIIw-2	1w6
BeU	Beulah fine sandy loam, undulating	9	IIs-1	2o4
BoU	Bowdre silty clay loam, undulating	10	IIIw-3	2w5
BrD	Brandon silt loam, 3 to 12 percent slopes	11	IVe-1	3o7
BsE	Brandon-Saffell complex, 12 to 20 percent slopes	11	VIe-1	3o7
CaA	Calloway silt loam, 0 to 1 percent slopes	13	IIw-1	3w8
CaB	Calloway silt loam, 1 to 3 percent slopes	13	IIe-1	3w8
Co	Collins silt loam, occasionally flooded	14	IIw-2	1o7
Cu	Convent silt loam	14	IIw-2	1w5
DbU	Dubbs silt loam, undulating	15	IIe-2	2o4
DdA	Dundee silt loam, 0 to 2 percent slopes	15	IIw-3	2w5
Ec	Earle silty clay loam	16	IIIw-1	2w6
Fa	Falaya silt loam, occasionally flooded	17	IIw-2	1w8
Fo	Foley-Calhoun complex	17	IIIw-4	3w9
GrB	Grenada silt loam, 1 to 3 percent slopes	19	IIe-1	3o7
Ha	Hayti soils	19	-------	1w6
	Protected and occasionally flooded part	--	IIIw-5	---
	Frequently flooded part	--	IVw-1	---
He	Henry silt loam	20	IIIw-6	3w9
Hm	Hillemann silt loam	21	IIw-1	3w9
Jc	Jackport silty clay loam	21	IIIw-1	2w6
LgC2	Loring silt loam, 3 to 8 percent slopes, eroded	22	IIIe-1	3o7
LgD2	Loring silt loam, 8 to 12 percent slopes, eroded	22	IVe-1	3o7
MeE	Memphis-Loring complex, 12 to 40 percent slopes	23	VIIe-1	2r8
Mo	Mhoon silt loam	25	-------	1w6
	Protected part	--	IIIw-5	---
	Frequently flooded part	--	IVw-1	---
Sc	Sharkey clay	26	IIIw-1	2w6
Sm	Sharkey-Steele complex	26	IIIw-1	2w6
SN	Sharkey soils, frequently flooded	26	IVw-1	3w6
Tc	Tichnor soils, frequently flooded	27	Vw-1	1w6
TnA	Tunica clay, 0 to 1 percent slopes	28	IIIw-1	2w6
TnU	Tunica clay, undulating	28	IIIw-1	2w6

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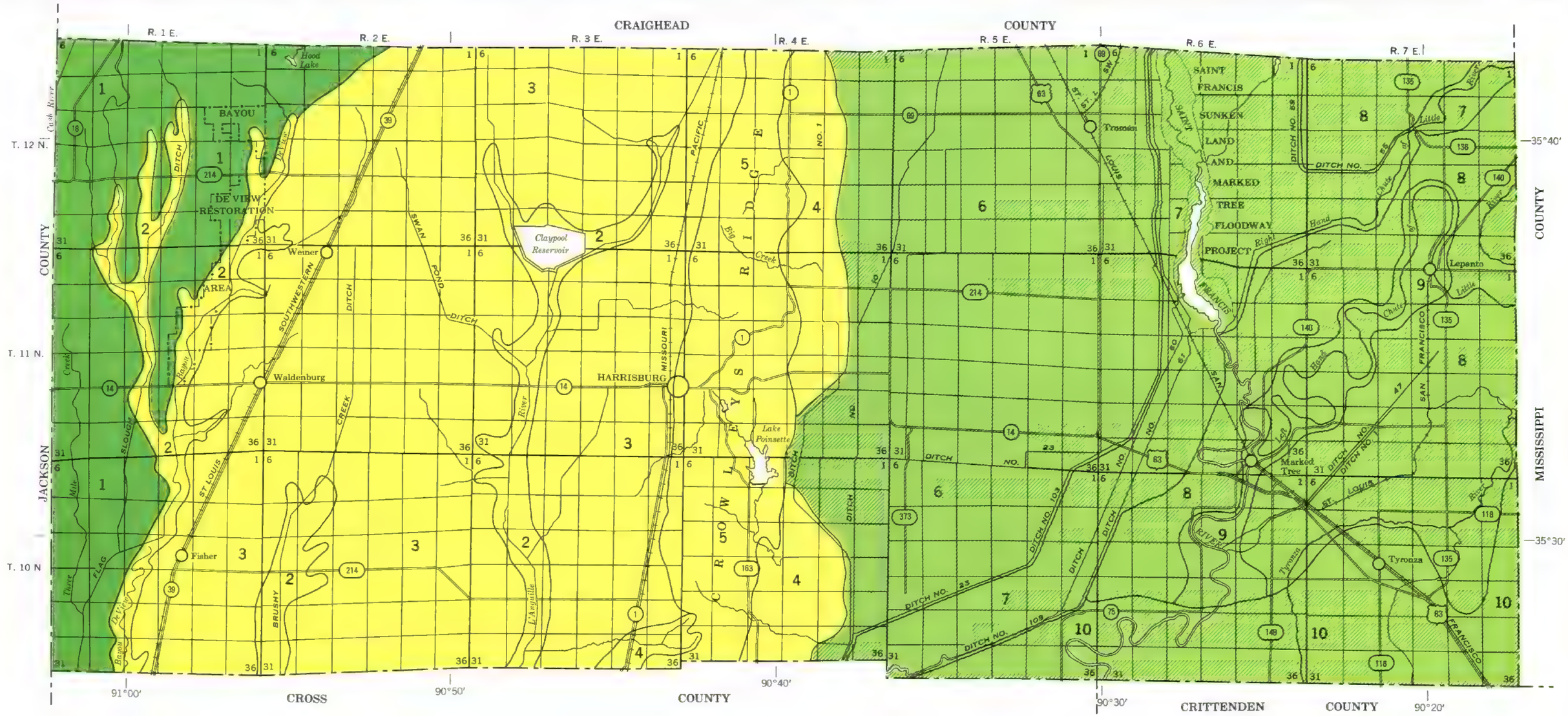


SOIL ASSOCIATIONS

SOILS FORMED IN ALLUVIAL SEDIMENTS IN SLACK-WATER AREAS ON FLOOD PLAINS OF FORMER RIVERS

1 — Jackport association: Poorly drained, level, mostly clayey soils on broad flats

SOILS FORMED MAINLY IN WIND-LAID SEDIMENTS ON UPLANDS AND IN SEDIMENTS ON FLOOD PLAINS OF SMALL STREAMS THAT DRAIN THE UPLANDS

2 — Tichnor association: Poorly drained, level loamy soils on flood plains

3 — Henry-Hillemann-Calloway association: Poorly drained and somewhat poorly drained, level and nearly level loamy soils on uplands

4 — Falaya-Collins association: Somewhat poorly drained and moderately well drained, level loamy soils on flood plains

5 — Loring-Brandon-Memphis association: Moderately well drained and well drained, gently sloping to steep loamy soils on uplands

SOILS FORMED IN ALLUVIAL SEDIMENTS ON NATURAL LEVEES AND SLACK-WATER AREAS ON FLOOD PLAINS OF LARGE RIVERS

6 — Mhoon-Dundee association: Poorly drained and somewhat poorly drained, level and nearly level loamy soils on natural levees

7 — Sharkey association: Poorly drained, level clayey soils on frequently flooded, depressed parts of slack-water areas

8 — Sharkey-Steele association: Poorly drained and moderately well drained, level clayey to sandy soils in slack-water areas

9 — Tunica-Sharkey association: Poorly drained, level and undulating clayey soils in slack-water areas

10 — Sharkey-Alligator association: Poorly drained, level clayey soils in slack-water areas

Compiled 1975

SECTIONALIZED TOWNSHIP

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

Each area outlined on this map consists of more than one kind of soil. The map is thus meant for general planning rather than a basis for decisions on the use of specific tracts.

N

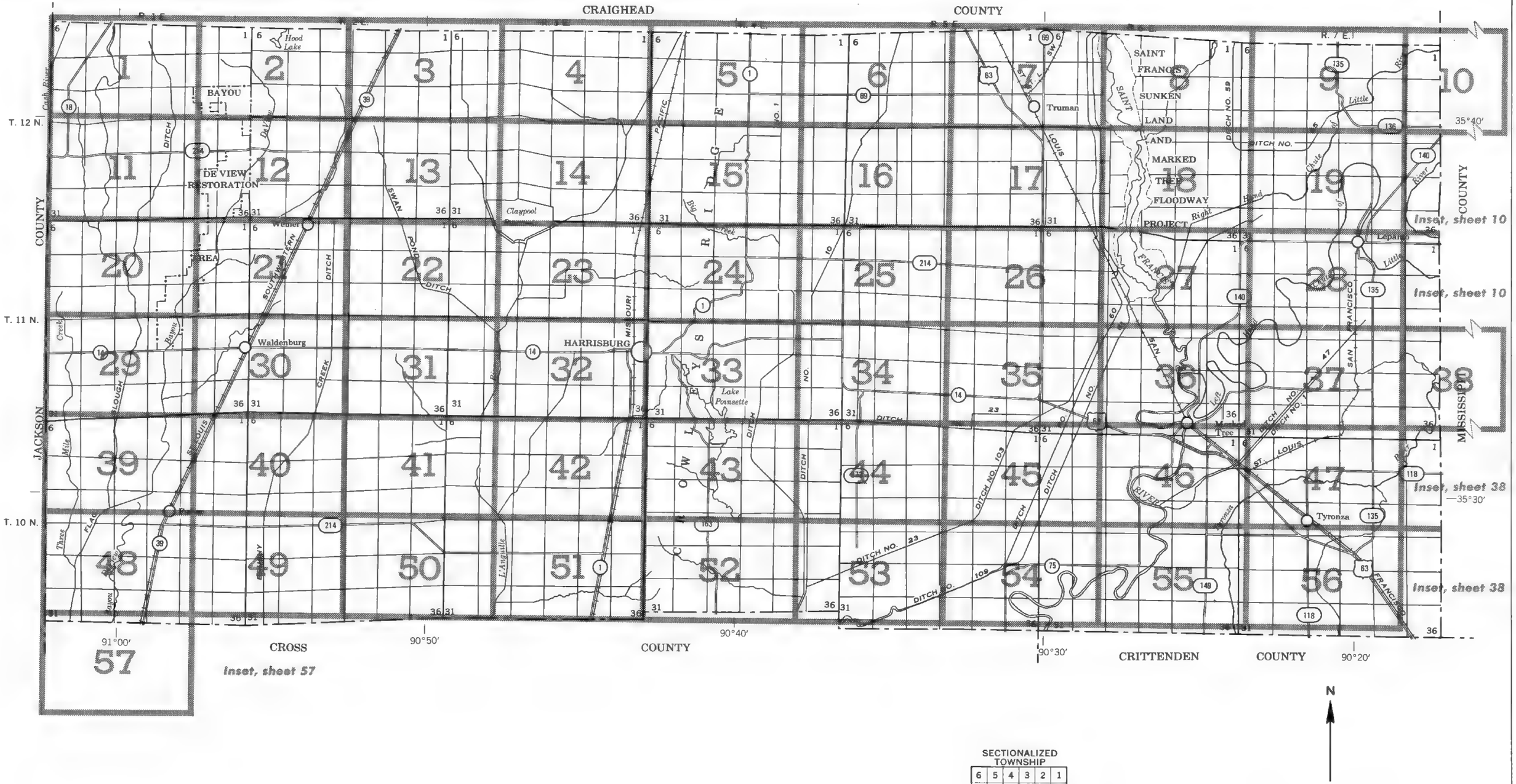
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
ARKANSAS AGRICULTURAL EXPERIMENT STATION

GENERAL SOIL MAP

POINSETT COUNTY, ARKANSAS

Scale 1:190,080

1 0 1 2 3 4 Miles



SECTIONALIZED TOWNSHIP					
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

INDEX TO MAP SHEETS

POINSETT COUNTY, ARKANSAS

Scale 1:190,080

1 0 1 2 3 4 Miles

SOIL LEGEND

The first letter, always a capital, is the initial letter of the soil name. The second letter is a capital if the mapping unit is broadly defined 1/; otherwise, it is a small letter. The third letter, a capital A, B, C, D, or E, shows the class of slope, and U indicates an undulating soil. Symbols without a slope letter are those of level soils. A final number, 2, in the symbol shows that the soil is eroded.

SYMBOL	NAME
Aa	Alligator clay
An	Amagon silt loam
BeU	Beulah fine sandy loam, undulating
BoU	Bowdre silty clay loam, undulating
BrD	Brandon silt loam, 3 to 12 percent slopes
BsE	Brandon-Saffell complex, 12 to 20 percent slopes
CaA	Calloway silt loam, 0 to 1 percent slopes
CaB	Calloway silt loam, 1 to 3 percent slopes
Co	Collins silt loam, occasionally flooded
Cu	Convent silt loam
DbU	Dubbs silt loam, undulating
DdA	Dundee silt loam, 0 to 2 percent slopes
Ec	Earle silty clay loam
Fa	Falaya silt loam, occasionally flooded
Fo	Foley-Calhoun complex
GrB	Grenada silt loam, 1 to 3 percent slopes
Ha	Hayti soils
He	Henry silt loam
Hm	Hillemann silt loam
Jc	Jackport silty clay loam
LgC2	Loring silt loam, 3 to 8 percent slopes, eroded
LgD2	Loring silt loam, 8 to 12 percent slopes, [illegible]
MeE	Memphis-Loring complex, 12 to 40 percent slopes
Mo	Mhoon silt loam
Sc	Sharkey clay
Sm	Sharkey-Steele complex
SN	Sharkey soils, frequently flooded
Tc	Tichnor soils, frequently flooded
TnA	Tunica clay, 0 to 1 percent slopes
TnU	Tunica clay, undulating

1/ The composition of these units is more variable than that of others in the survey area but has been controlled well enough to be interpreted for the expected use of the soils.

CONVENTIONAL AND SPECIAL SYMBOLS LEGEND

CULTURAL FEATURES

BOUNDARIES

- National, state or province
- County or parish
- Minor civil division
- Reservation (national forest or park, state forest or park, and large airport)
- Land grant
- Limit of soil survey (label)
- Field sheet matchline & neatline

AD HOC BOUNDARY (label)

- Small airport, airfield, park, oilfield, cemetery, or flood pool (Davis Airstrip; FLOOD POOL LINE)

STATE COORDINATE TICK

LAND DIVISION CORNERS (sections and land grants)

ROADS

- Divided (median shown if scale permits)
- Other roads
- Trail

ROAD EMBLEMS & DESIGNATIONS

- Interstate (70)
- Federal (410)
- State (52)
- County, farm or ranch (378)

RAILROAD

POWER TRANSMISSION LINE (normally not shown)

PIPE LINE (normally not shown)

FENCE (normally not shown)

LEVEES

- Without road
- With road
- With railroad

DAMS

- Large (to scale)
- Medium or small (water; w)

PITS

- Gravel pit
- Mine or quarry

MISCELLANEOUS CULTURAL FEATURES

- Farmstead, house (omit in urban areas)
- Church
- School
- Indian mound (label) (Indian Mound)
- Located object (label) (Tower)
- Tank (label) (GAS)
- Wells, oil or gas
- Windmill
- Kitchen midden

WATER FEATURES

DRAINAGE

- Perennial, double line
- Perennial, single line
- Intermittent
- Drainage end
- Canals or ditches
  - Double-line (label) (CANAL)
  - Drainage and/or irrigation

LAKES, PONDS AND RESERVOIRS

- Perennial (water; w)
- Intermittent (int; i)

MISCELLANEOUS WATER FEATURES

- Marsh or swamp
- Spring
- Well, artesian
- Well, irrigation
- Wet spot

SPECIAL SYMBOLS FOR SOIL SURVEY

SOIL DELINEATIONS AND SYMBOLS (CeA; FoB2)

ESCARPMENTS

- Bedrock (points down slope)
- Other than bedrock (points down slope)

SHORT STEEP SLOPE

GULLY

DEPRESSION OR SINK

SOIL SAMPLE SITE (normally not shown) (S)

MISCELLANEOUS

- Blowout
- Clay spot
- Gravelly spot
- Gumbo, slick or scabby spot (sodic)
- Dumps and other similar non soil areas
- Prominent hill or peak
- Rock outcrop (includes sandstone and shale)
- Saline spot
- Sandy spot
- Severely eroded spot
- Slide or slip (tips point upslope)
- Stony spot, very stony spot (0)
- Borrow pit (B.P.)

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 1

POINSETT COUNTY, ARKANSAS NO. 1

This map is compiled on 1974 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies
Coordinate grid ticks and land division corners, if shown, are approximately positioned

2 290 000 FEET

500 000 FEET

CRAIGHEAD COUNTY

R. 1 E.

FIFTH PRINCIPAL MERIDIAN

T. 12 N.

JACKSON COUNTY

Cache River

Channel

Old

Pitts

Spread Ditch

Ash Ditch

Long Ditch

DbU Creek

Maple Slough

Flag Slough

Ditch

Slough

Bayou DeView Restoration Area

Fo Mo An DdA DbU He GrB CaB CaA Tc Jc

1 2 3 4 5 6 7 8 9 10 11 14 15 16 17 18

(Joins sheet 2)

(Joins sheet 11)

2 310 000 FEET

490 000 FEET

N

1

1 Mile

5000 Feet

Scale · 1:20000

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 2

2

N

2 330 000 FEET

500 000 FEET

490 000 FEET

CRAIGHEAD COUNTY

R. 1 E. | R. 2 E.

T. 12 N.

1 Mile

5000 Feet

Scale 1:20000

(Joins sheet 1)

(Joins sheet 3)

(Joins sheet 12)

Flag Slough Ditch

Hood Lake

DeView Bayou

Bayou DeView

Morgan Slough

Bayou DeView Restoration Area

water

Jc Tc Fo Hm He Fa CaB GrB CaA Dbu LgC2

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

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Soil boundaries shown are approximately positioned
Coordinate grid ticks and land division corners if shown are approximately positioned

ARKANSAS NO. 2

POINSETT COUNTY, ARKANSAS

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 3

POINSETT COUNTY, ARKANSAS NO. 3

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Coordinate grid ticks and land division corners if shown are approximately positioned

2 335 000 FEET

500 000 FEET

CRAIGHEAD COUNTY

R. 2 E. | R. 3 E.

T. 12 N.

(Joins sheet 2)

(Joins sheet 4)

(Joins sheet 13)

2 355 000 FEET

490 000 FEET

SOUTHWESTERN

ST LOUIS

Lateral

Pecan

water

Tc LgC2 Hm He CaA CaB

1 2 3 5 6 7 8 10 11 12 13 14 15 17 18 19 20

3

N

1 Mile 5000 Feet

Scale 1:20000

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 4

4

N

2 380 000 FEET

R. 3 E. | R. 4 E.

CRAIGHEAD COUNTY

500 000 FEET

T. 12 N.

1 Mile

5000 Feet

0

0

Scale 1:20000

1000 2000 3000 4000 5000

(Joins sheet 3)

490 000 FEET

2 360 000 FEET

(Joins sheet 14)

(Joins sheet 5)

No 2 Ditch

Main

No 1 Lateral

CaA

Hm

He

Jc

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

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Dashed lines, if shown, are approximately positioned.
Coordinate grid ticks and land division corners, if shown, are approximately positioned.

POINSETT COUNTY, ARKANSAS NO. 4

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 5

POINSETT COUNTY, ARKANSAS NO. 5

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Coordinate grid ticks and land division corners, if shown, are approximately positioned

2 385 000 FEET

CRAIGHEAD COUNTY

R 4 E

T. 12 N.

(Joins sheet 4)

(Joins sheet 6)

(Joins sheet 15)

2 405 000 FEET

490 000 FEET

Lateral

No 1

PACIFIC

MISSOURI

Creek

Ganaway

Ditch

No 2

NO 1

DITCH

1 Mile

5000 Feet

Scale 1:20000

6

N

CRAIGHEAD COUNTY

R. 4 E. | R 5 E.

2 430 000 FEET

500 000 FEET

T. 12 N.

(Joins sheet 5)

(Joins sheet 7)

(Joins sheet 16)

490 000 FEET

2 410 000 FEET

DITCH NO 9

DITCH NO 10

Ditch No 14

No 15

Ditch

Stacy

1 Mile

5000 Feet

Scale 1:20000

0 0

1 5000 | ¼ 1000 | ½ 2000 | ¾ 3000 | 4000 5000

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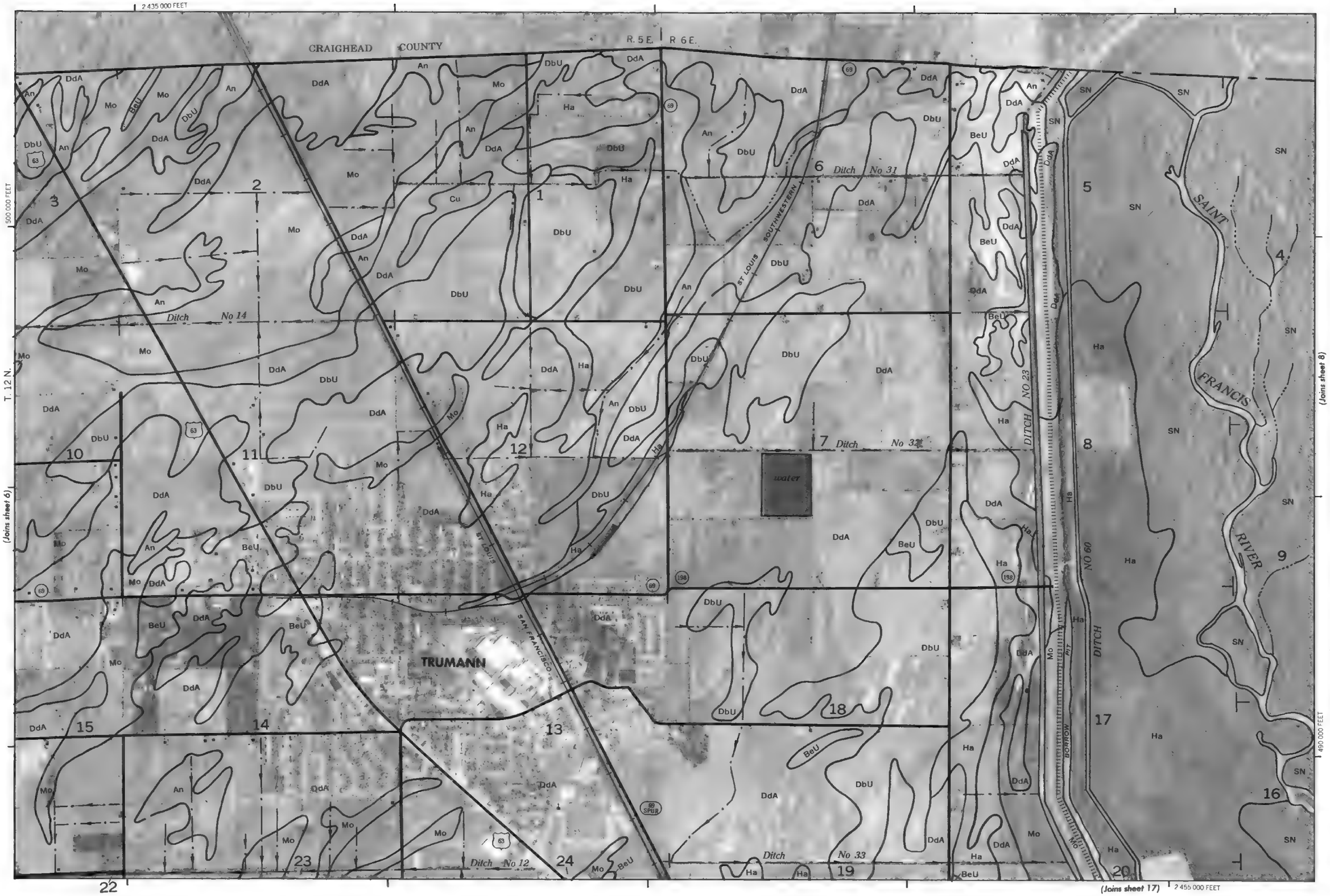
Coordinate grid ticks and land division corners if shown are approximately positioned

POINSETT COUNTY, ARKANSAS NO. 6

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 7



7

N

1 Mile

5 000 Feet

Scale 1:20000

POINSETT COUNTY, ARKANSAS NO. 7

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Coordinate grid ticks and land division corners, if shown, are approximately positioned.

8

N

1 Mile
5000 Feet
Scale 1:20000
0 0
¼ ¼
½ ½
¾ ¾
1 1
1000 2000 3000 4000 5000

2 480 000 FEET

500 000 FEET

490 000 FEET

2 460 000 FEET

CRAIGHEAD COUNTY

R. 6 E. | R. 7 E.

T. 12 N.

(Joins sheet 7)

(Joins sheet 9)

(Joins sheet 18)

Hatchie Coon Lake

Coon Island

Hatchie

Middle Island

Lead Fork

SAINT FRANCIS RIVER

DITCH NO 59

Ditch No 57

DITCH NO 56

Mo SN Ha DdA Sm Sc

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

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Coordinate grid ticks and land division corners, if shown, are approximately positioned

POINSETT COUNTY, ARKANSAS NO. 8

POINSETT COUNTY, ARKANSAS NO. 9

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Coordinate grid ticks and land division corners if shown, are approximately positioned

2 485 000 FEET

500 000 FEET

CRAIGHEAD COUNTY

R. 7 E.

T. 12 N.

(Joins sheet 8)

(Joins sheet 10)

(Joins sheet 19)

2 505 000 FEET

490 000 FEET

9

N

1 Mile

5000 Feet

Scale 1:20000

DITCH NO 4

DITCH NO 65

DITCH NO 57

DITCH NO 56

DITCH NO 54

DITCH NO 2

DITCH NO 1

DITCH NO 7

DITCH NO 63

Ditch No 53

DITCH NO 12

LITTLE RIVER

CHUTE OF LITTLE RIVER

RIGHT HAND CHUTE

BORROW PIT

Rivervale

Ha

Sm

SN

DdA

An

Sc

BoU

5

4

3

2

1

6

7

8

9

10

11

12

13

14

15

16

17

18

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 10

10

N

Scale 1:20000

1 Mile 5000 Feet

0 ½ 1 000 2000 3000 4000 5000

INSET A (Joins lower left)

INSET B (Joins inset A,

2 511 000 FEET

2 510 000 FEET

500 000 FEET

485 000 FEET

470 000 FEET

490 000 FEET

475 000 FEET

455 000 FEET

2 507 000 FEET

R. 7 E.

CRAIGHEAD CO

RIGHT HAND CHUTE OF LITTLE RIVER

water

T. 12 N.

T. 11 N.

COUNTY

MISSISSIPPI

DITCH NO 12

Ditch No 52

Ditch No 68

LEFT HAND CHUTE OF LITTLE RIVER

LEFT HAND CHUTE OF LITTLE RIVER

(Joins sheet 9)

(Joins inset A,

(Joins inset B,

(Joins sheet 19)

(Joins sheet 28)

(Joins sheet 38)

This map was compiled on 1974 aerial photography by the U. S. Department of Agriculture Soil Conservation Service and cooperating agencies
Coordinate grid ticks and land division corners, if shown, are approximately positioned

POINSETT COUNTY, ARKANSAS NO. 10

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 11

POINSETT COUNTY, ARKANSAS NO. 11

This map is compiled on 1974 aer al photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies
Coordinate grid ticks and land division corners, if shown, are approximately positioned

2 290 000 FEET

R. 1 E.

(Joins sheet 1)

485 000 FEET

T. 12 N.

FIFTH PRINCIPAL MERIDIAN

JACKSON COUNTY

Bayou DeView Restoration Area

(Joins sheet 12)

(Joins sheet 20)

2 310 000 FEET

475 000 FEET

1 Mile

5000 Feet

Scale 1:20000

N

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 12

12

N

1 Mile

5000 Feet

Scale: 1:20000

(Joins sheet 2)

R. 1 E. | R. 2 E.

2 330 000 FEET

485 000 FEET

475 000 FEET

2 310 000 FEET

(Joins sheet 11)

(Joins sheet 21)

(Joins sheet 13)

Bayou DeView Restoration Area

Morgan Slough

DEVIEW BAYOU

Bayou DeView Restoration Area

SOUTHWESTERN ST LOUIS

Ditch Creek Brushy

Weiner

water

Jc Hm He Fo Tc Ha CaB

T. 12 N.

T. 11 N.

This map is compiled on 1974 aerial photography by the U. S. Department of Agriculture. Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

POINSETT COUNTY, ARKANSAS NO. 12

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 13

2 335 000 FEET

R. 2 E. | R. 3 E.

(Joins sheet 3)

13

N

485 000 FEET

15 14 13 18 17

19 20

22 23 24

27 26 25 30 29

34 35 36 31 32

3 2 1 6 5

T. 12 N.
T. 11 N.

(Joins sheet 12)

(Joins sheet 14)

(Joins sheet 22)

2 355 000 FEET

475 000 FEET

Swan

Pond

Ditch

Lateral

Pecan

Pecan

Lateral

water

water

Claypool Reservoir

CaA

He

Hm

Tc

1 Mile
5000 Feet

Scale 1:20000

POINSETT COUNTY, ARKANSAS NO. 13

This map was compiled on 1974 aerial photography by the U S Department of Agriculture Soil Conservation Service and cooperating agencies
Coordinate grid ticks and land division corners if shown, are approximately positioned

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 14

14

N

1 Mile

5000 Feet

Scale · 1 : 20000

(Joins sheet 4)

2 380 000 FEET

R. 3 E. | R. 4 E.

485 000 FEET

(Joins sheet 13)

475 000 FEET

2 360 000 FEET

(Joins sheet 23)

(Joins sheet 15)

T. 12 N.

T. 11 N.

Ditch

Overcup

Lateral No 1

Lateral No 2

Main Ditch

Missouri Pacific

Claypool Reservoir

L'Anguille River

Greenfield

17 16 15 14 13 18

20 21 22 23 24 19

29 28 27 26 25 30

32 33 34 35 36 31

He Hm Tc CaA CaB GrB Co Fa LgC2

This map is compiled on 1974 aerial photography by the U. S. Department of Agriculture Soil Conservation Service and cooperating agencies
Coordinate grid ticks and land division corners (shown are approximate)

POINSETT COUNTY, ARKANSAS NO. 14

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 15

POINSETT COUNTY, ARKANSAS NO. 15

This map is compiled on 1974 aerial photography by the U.S. Department of Agriculture, Soil Conservation Service and cooperating agencies
Coordinate grid ticks and land division corners if shown are approximate y positioned

2 385 000 FEET

485 000 FEET

R. 4 E.

(Joins sheet 5)

(Joins sheet 14)

T. 12 N.

(Joins sheet 16)

(Joins sheet 24)

2 405 000 FEET

475 000 FEET

15

N

1 Mile

5000 Feet

Scale 1:20000

16

N

1 Mile
5000 Feet
0
Scale 1:20000
1000
2000
3000
4000
5000

R. 4 E. R. 5 E.

(Joins sheet 6)

2 430 000 FEET

485 000 FEET

475 000 FEET

2 410 000 FEET

(Joins sheet 25)

(Joins sheet 15)

(Joins sheet 17)

T. 12 N.
T. 11 N.

Ditch
No 5
No 10
No 12
No 16
No 17
No 11
DITCH
Ditch No 77
Promised Land

Aa An Ha Fo Sc Sm Mo DdA BeU

This map was compiled on 1974 aerial photography by the U. S. Department of Agriculture Soil Conservation Service and cooperating agencies
Coordinate grid ticks and lines to nearest corners of known, are approximately positioned

POINSETT COUNTY, ARKANSAS NO. 16

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 17

R. 5 E. R. 6 E.

2 435 000 FEET

485 000 FEET

(Joins sheet 7)

(Joins sheet 16)

(Joins sheet 18)

(Joins sheet 26)

2 455 000 FEET

475 000 FEET

TRUMANN

ST. LOUIS SOUTHWESTERN

BORROW PIT

Ditch No 12

Ditch No 16

Ditch No 17

Ditch No 11

Ditch No 33

Ditch No 23

Ditch No 30

Ditch No 60

Twist Ditch

T. 12 N.
T. 11 N.

17

N

1 Mile

5000 Feet

Scale 1:20000

POINSETT COUNTY, ARKANSAS NO. 17

This map is compiled on 1974 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies.
Coordinate grid ticks and land division corners, if shown, are approximately positioned

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 18

18

N

1 Mile
5000 Feet

Scale 1:20000

(Joins sheet 8)

(Joins sheet 17)

R 6 E | R. 7 E.

2 480 000 FEET

485 000 FEET

475 000 FEET

T. 12 N.
T. 11 N.

2 460 000 FEET

(Joins sheet 27)

(Joins sheet 19)

RIVER
FRANCIS
SAINT
Lead Fork
Lead
Fork
Iron Mines Creek
Creek
DITCH
NO 59
NO 54
NO 2
NO 1
NO 55
BORROW PIT
RIGHT HAND CHUTE OF LITTLE RIVER

16 15 14 13 18
21 22 23 24 19
28 27 26 25 30
33 34 35 36 31
4

SN Ha DdA Sm Sc

This map is compiled on 1974 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies
Control is by USC&GS and land division corners.
Coordinate grid ticks and land division corners, if shown, are approximately plotted.

POINSETT COUNTY, ARKANSAS NO. 18

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 19

N

2 485 000 FEET

R. 7 E.

(Joins sheet 9)

485 000 FEET

T. 12 N.

(Joins sheet 18)

(Joins sheet 28)

2 505 000 FEET

475 000 FEET

(Joins inset A, sheet 10)

1 Mile

5000 Feet

Scale 1:20000

POINSETT COUNTY, ARKANSAS NO. 19

This map is compiled on 1974 aerial photography by the U. S. Department of Agriculture Soil Conservation Service and cooperating agencies
Coordinate grid ticks and land division corners if shown are approximately positioned

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 20

20

N

1 Mile

5000 Feet

Scale 1:20000

0 0 ¼ 1000 ½ 2000 ¾ 3000 1 4000 5000

(Joins sheet 11)

R. 1 E.

2 310 000 FEET

470 000 FEET

T. 11 N. | T. 12 N.

MERIDIAN

JACKSON COUNTY

PRINCIPAL

FIFTH

Ash Spread Ditch Long Creek Slough Flag Ditch DeView Bayou Restoration Area BAYOU DEVIEW Hogue Lake

water

31 32 33 34 35 6 5 4 3 2 7 8 9 10 11 18 17 16 15 14

Hm Jc Tc He CaA CaB GrB DbU LgC2 An

(Joins sheet 29)

2 290 000 FEET

455 000 FEET

(Joins sheet 21)

This map is compiled on 1974 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies
Coordinate grid ticks and land division corners, if shown, are approximately positioned

POINSETT COUNTY, ARKANSAS NO. 20

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 21

POINSETT COUNTY, ARKANSAS NO. 21

This map is compiled on 1974 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies
Coordinate grid (dots and land division corners, if shown, are approximately positioned)

2 310 000 FEET

470 000 FEET

R. 1 E. R 2 E.

T. 11 N. T. 12 N.

(Joins sheet 20)

(Joins sheet 12)

(Joins sheet 22)

(Joins sheet 30)

2 330 000 FEET

460 000 FEET

DEVIEW BAYOU

SOUTHWESTERN ST LOUIS

Weiner

Ditch Creek

Brushy Creek

Hm CaB Tc He CaA GrB LgC2 Jc

1 Mile 5,000 Feet

Scale 1:20000

21

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 22

22

N

Scale 1:20000

1 Mile 5000 Feet

0 ½ 1000 2000 3000 4000 5000

(Joins sheet 13)

R. 2 E. | R. 3 E.

T. 12 N. | T. 11 N.

2 355 000 FEET

470 000 FEET

460 000 FEET

2 335 000 FEET

(Joins sheet 21)

(Joins sheet 23)

(Joins sheet 31)

34 35 36 31 32

3 2 1 6 5

10 11 12 7 8

15 14 13 18 17

22 23 24 19 20

Claypool Reservoir

Pecan Lateral

Swan Pond

Bayou Ditch

Raccoon Ditch

He Hm Tc CaA GrB

This map is compiled on 1974 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies
Coordinate grid ticks and land lines on corners if shown, are approximately positioned

POINSETT COUNTY, ARKANSAS NO. 22

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 23

POINSETT COUNTY, ARKANSAS NO. 23

This map is compiled on 1974 aerial photography by the U. S. Department of Agriculture Soil Conservation Service and cooperating agencies
Coordinate grid ticks and land division corners shown are approximately positioned

2 360 000 FEET

470 000 FEET

T. 12 N.

T. 11 N.

R. 3 E.

R 4 E.

(Joins sheet 14)

(Joins sheet 22)

(Joins sheet 24)

(Joins sheet 32)

2 380 000 FEET

460 000 FEET

Claypool Reservoir

Pecan Lateral

RIVER

L'ANGUILLE

Bolivar Creek

Hollow Branch

Hollow Branch

Lateral

PACIFIC

MISSOURI

water

water

Tc Hm He GrB CaB CaA Jc Co Fa LgC2 LgD2 BsE BrD Br

1 Mile

5000 Feet

Scale 1:20000

0 ¼ ½ ¾ 1

0 1000 2000 3000 4000 5000

23

N

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 24

24

N

R. 4 E.

T. 12 N.
T. 11 N.

2 405 000 FEET

470 000 FEET

460 000 FEET

2 385 000 FEET

(Joins sheet 15)

(Joins sheet 23)

(Joins sheet 33)

(Joins sheet 25)

1 Mile
5000 Feet
Scale 1:20000

Big Creek

NO 1 DITCH

Bolivar Creek

Springs Branch

Holly Ditch No 83

Ditch No 84

Ditch No 2A

Ditch No 2

NO 1 DITCH

This map is compiled on 1974 aerial photography by the U. S. Department of Agriculture Soil Conservation Service and cooperating agencies
Soil boundaries, if shown, are approximately positioned
Coordinate grid ticks and land division corners, if shown, are approximately positioned

POINSETT COUNTY, ARKANSAS NO. 24

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 25

POINSETT COUNTY, ARKANSAS NO. 25

This map is compiled on 1974 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies
Coordinate grid ticks and and civision corners 1 shown are approximately positioned

35 | 2 410 000 FEET | R. 4 E. | R. 5 E. | 31 | 32 | 33 | (Joins sheet 16)

T. 12 N.
T. 11 N.

470 000 FEET

36 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 23 24

Ditch No 77 · Ditch No 81 · Ditch No 83 · NO 10 · NO 11 · DITCH · Ditch No 11 · Ditch No 18 · Ditch No 19 · Ditch No 20 · McCormick

(Joins sheet 24) · (Joins sheet 26) · (Joins sheet 34)

460 000 FEET

2 430 000 FEET

25

N

1 Mile 5000 Feet

Scale 1:20000

0 ¼ ½ ¾ 1

5000 4000 3000 2000 1000 0

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 26

(26)

N

Scale 1:20000

1 Mile 5000 Feet

0 ¼ ½ ¾ 1

0 1000 2000 3000 4000 5000

(Joins sheet 17)

R. 5 E. R. 6 E.

2 455 000 FEET

470 000 FEET

460 000 FEET

2 435 000 FEET

(Joins sheet 25)

(Joins sheet 27)

(Joins sheet 35)

T. 11 N.

Judd Hill

Ditch No 18

Ditch No 19

Ditch No 28

Ditch No 29

DITCH NO 30

DITCH NO 90

DITCH NO 60

SAN FRANCISCO DITCH NO 60

DITCH NO 23

BORROW PIT

water

Tulot

Ha Mo DdA BeU Sc Sm SN TnA DbU

63 214

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

This map is compiled on 1974 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies
Coordinate grid ticks and land divisions, where shown, are approximately positioned

POINSETT COUNTY, ARKANSAS NO. 26

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 27

POINSETT COUNTY, ARKANSAS NO. 27

This map is compiled on 1974 aer al photography by the U. S. Department of Agriculture, Soil Conservation Serv ce and cooperating agencies
Coordinate grid lucks and land div sion corners, if shown, are approx mately positioned.

2 460 000 FEET

470 000 FEET

R. 6 E. | R. 7 E.

(Joins sheet 18)

T. 12 N.

T. 11 N.

(Joins sheet 26)

(Joins sheet 28)

(Joins sheet 36)

460 000 FEET

2 480 000 FEET

27

N

1 Mile

5000 Feet

Scale 1:20000

SAINT FRANCIS RIVER

Iron Mines Creek

BORROW PIT

DITCH

NO 46

No 45

No 60

No 34

ST LOUIS SAN FRANCISCO

Ditch

33 34 35 36 31

4 3 2 1 6

10 11 12 7

9 16 15 14 13 18

SN Sm Sc Ha DdA BeU TnA TnU Mo Cu

28

N

(Joins sheet 19)

R. 7 E.

2 505 000 FEET

T. 11 N. | T. 12 N.

470 000 FEET

LEPANTO

SAN FRANCISCO

ST LOUIS

LITTLE RIVER

LEFT HAND CHUTE OF LITTLE RIVER

Air Strip

Ditch No 45

Ditch No 69

Ditch No 51

Ditch No 45B

Ditch No 47A

Ditch No 50

Ditch No 72

Ditch No 68

Ditch No 49

Ditch No 47

(Joins sheet 27)

(Joins sheet 37)

(Joins inset B, sheet 10)

455 000 FEET

2 485 000 FEET

1 Mile

5000 Feet

Scale 1:20000

0 ¼ ½ ¾ 1

0 1000 2000 3000 4000 5000

This map is compiled on 1974 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies.
Coordinate grid ticks and land division corners, if shown, are approximately positioned

POINSETT COUNTY, ARKANSAS NO. 28

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 29

POINSETT COUNTY, ARKANSAS NO. 29

This map s compiled on 1974 aerial photography by the U S. Department of Agri culture So i Conservat on Service and cooperating agenc es
Could nate grid ticks and land division corners if shown are approximately posit oned

2 290 000 FEET

R. 1 E

(Joins sheet 20)

29

N

455 000 FEET

T. 11 N.

T. 10 N.

JACKSON COUNTY

PRINCIPAL MERIDIAN

FIFTH

BAYOU DEVIEW

Threemile Creek

Snake Slough

Flag Slough

Ditch

Hogue Lake

water

(Joins sheet 30)

(Joins sheet 39)

2 310 000 FEET

440 000 FEET

1 Mile

5000 Feet

Scale · 1 : 20000

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 30

30

N

R. 1 E. | R. 2 E.

2 330 000 FEET

455 000 FEET

440 000 FEET

2 310 000 FEET

(Joins sheet 21)

(Joins sheet 29)

(Joins sheet 40)

(Joins sheet 31)

Scale · 1:20000

1 Mile

5 000 Feet

0 ½ 1 000 ½ 2 000 ¾ 3000 ¾ 4000 1 5000

Waldenburg

SOUTHWESTERN

ST LOUIS

Ditch

Creek

Brushy

water

T. 10 N. | T. 11 N.

This map is compiled on 1974 aerial photography by the U.S. Department of Agriculture Soil Conservation Service — cooperating agencies.
Coordinate grid ticks and land division corners, if shown, are approximately positioned.

POINSETT COUNTY, ARKANSAS NO. 30

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 31

POINSETT COUNTY, ARKANSAS NO. 31

This map is compiled on 1974 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies
Coordinate grid ticks and land division corners, if shown, are approximately positioned

2 335 000 FEET

455 000 FEET

R. 2 E.

R. 3 E.

(Joins sheet 22)

(Joins sheet 30)

(Joins sheet 32)

(Joins sheet 41)

2 355 000 FEET

440 000 FEET

T. 10 N.

T. 11 N.

31

N

1 Mile

5000 Feet

Scale 1:20000

Swan Pond Ditch

Powers Slough

RIVER L'ANGUILLE

Bear Branch

water

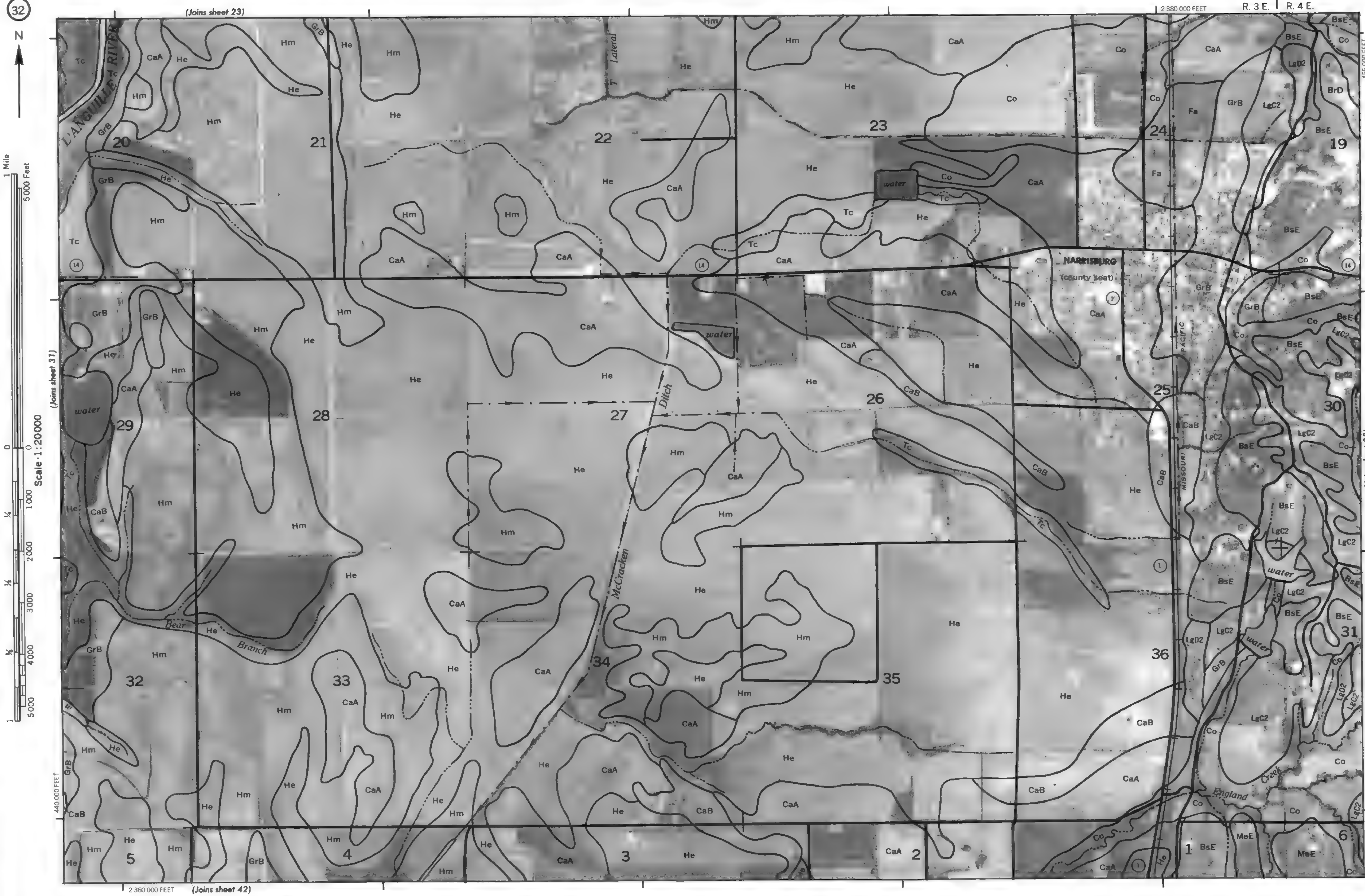
22 23 24 19 20

27 26 25 30 29

28 33 34 35 36 31 32

4 3 2 1 6 5

He Hm Tc CaA GrB CaB



POINSETT COUNTY, ARKANSAS NO. 32

This map is compiled on 1974 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 33

POINSETT COUNTY, ARKANSAS NO. 33

This mapis compiled on 1974 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies
Coordinate grid ticks and land division corners, if shown, are approximately positioned

2 385 000 FEET

455 000 FEET

R. 4 E.

(Joins sheet 24)

33

N

1 Mile

5 000 Feet

Scale 1:20000

(Joins sheet 34)

(Joins sheet 32)

(Joins sheet 43)

2 405 000 FEET

440 000 FEET

T. 10 N. | T. 11 N.

HARRISBURG

Whitaker

POINSETT COUNTY STATE PARK

Creek

England

Lake

Poinsett

water

NO 1 DITCH

No 8 Ditch

DITCH NO 10

Bro

BsE Co LgC2 LgD2 GrB BrD MeE Fa Mo Sc DdA Cu Ha w

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 34

(34)

N

1 Mile

5000 Feet

Scale 1:20000

(Joins sheet 25)

R. 4 E. | R. 5 E.

(Joins sheet 33)

2 440 000 FEET

2 430 000 FEET

455 000 FEET

(Joins sheet 35)

2 410 000 FEET (Joins sheet 44)

Landers

Ditch No 20

Ditch No 21

Ditch No 11

DITCH NO 23

NO 10 DITCH

Poss

T. 11 N.
T. 10 N.

This map is compiled on 1974 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies.
Coordinate grid ticks and land division corners, if shown, are approximately plotted.

POINSETT COUNTY, ARKANSAS NO. 34

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 35

35

N

R. 5 E. R. 6 E.

2 435 000 FEET

455 000 FEET

(Joins sheet 26)

(Joins sheet 34)

(Joins sheet 36)

(Joins sheet 45)

2 455 000 FEET

440 000 FEET

T. 11 N.
T. 10 N.

Payneway

Scale 1:20000

1 Mile 5000 Feet

POINSETT COUNTY, ARKANSAS NO. 35

This map is compiled on 1974 aerial photography by the U. S. Department of Agriculture Soil Conservation Service and cooperating agencies
Coordinate grid ticks and land division corners, if shown, are approximately positioned

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 36

36

N

Scale 1:20000

1 Mile 5000 Feet

0 0 ½ 1000 ½ 2000 ½ 3000 ½ 4000 5000

(Joins sheet 27)

(Joins sheet 35)

(Joins sheet 37)

(Joins sheet 46)

R. 6 E. R. 7 E.

T. 11 N.

2 480 000 FEET

455 000 FEET

440 000 FEET

16 15 14 13 18

21 22 23 24 19

28 27 26 25 30

33 34 35 36 31

SN Sm Cu TnA TnU DbU Sc BeU DdA Mo An

NO 61 DITCH No 34 NO 46 DITCH Ditch NO 41 ST LOUIS BORROW DITCH LITTLE CHUTE HAND LEFT SAN FRANCISCO OF RIVER No 86 Ditch No 47 Air Strip

MARKED TREE

63 140 308

This map is compiled on 1974 aerial photography by the U. S. Department of Agriculture. Soil Conservation Service and cooperating agencies.
Roads, if shown, are approximately positioned
Coordinate grid ticks and land division corners, if shown, are approximately positioned

POINSETT COUNTY, ARKANSAS NO. 36

POINSETT COUNTY, ARKANSAS -- SHEET NUMBER 37

POINSETT COUNTY, ARKANSAS NO. 37

This map is compiled on 1974 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies
Coordinate grid ticks and land div. corner, ¼ shown, are approximately positioned.

2 485 000 FEET

455 000 FEET

R. 7 E.

(Joins sheet 28)

T. 11 N.

(Joins sheet 36)

(Joins sheet 38)

(Joins sheet 47)

2 505 000 FEET

640 000 FEET

37

N

1 Mile

5000 Feet

Scale 1:20000

Spear Lake

SAN FRANCISCO

ST LOUIS

DITCH

Ditch No 47A

Ditch No 72

NO 48

Ditch No 47

Ditch No 48

Ditch No 1

Ditch No 86

water

TnA TnU Cu BeU DdA Sc Sm BoU

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 38

38

N

1 Mile
5000 Feet
Scale 1:20000

R. 7 E.
(Joins inset B, sheet 10)
2 511 000 FEET
455 000 FEET
T. 11 N.
T. 10 N.
(Joins sheet 37)
MISSISSIPPI COUNTY
440 000 FEET
2 507 000 FEET
(Joins inset A,)

INSET A
(Joins lower left)
R. 7 E.
2 511 000 FEET
435 000 FEET
(Joins sheet 47)
425 000 FEET
2 507 000 FEET
(Joins inset B,)

INSET B
(Joins inset A,)
R. 7 E.
2 511 000 FEET
420 000 FEET
(Joins sheet 56)
410 000 FEET
2 507 000 FEET
CRITTENDEN COUNTY

Sections: 13, 24, 25, 36, 1, 12, 36, 24, 25, 36

Roads: No 48, NO 6

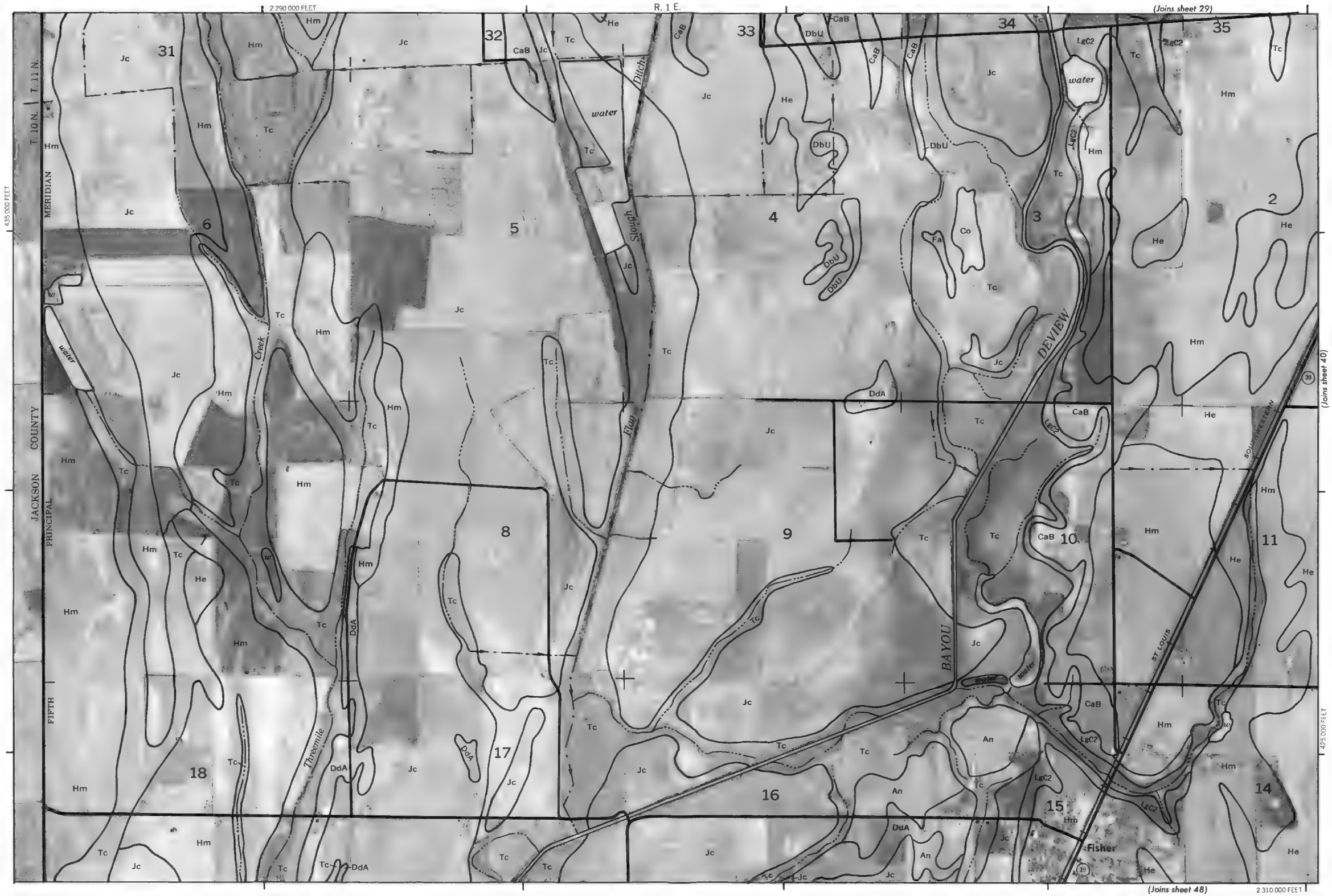
Water features: Ditch, DITCH, Spear Lake, TYRONZA RIVER, Ditch No 6, Dead Timber Lake

Soil mapping units: Sc, Sm, TnU, TnA, DdA, Aa, Ec, BoU, DbU

This map is compiled on 1974 aerial photography by the U. S. Department of Agriculture. Soil Conservation Service and cooperating agencies.
Coordinate grid ticks and land division corners, if shown, are approximately positioned

POINSETT COUNTY, ARKANSAS NO. 38

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 39



POINSETT COUNTY, ARKANSAS NO. 39

This map is compiled on 1974 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies.
Coordinate grid ticks and civil-station corners, if shown, are approximately positioned

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 40

(40)

N

1 Mile

5000 Feet

Scale 1:20000

(Joins sheet 30)

R. 1 E. | R. 2 E.

2 330 000 FEET

435 000 FEET

T. 10 N.

(Joins sheet 39)

(Joins sheet 41)

425 000 FEET

2 310 000 FEET

(Joins sheet 49)

ST LOUIS SOUTHWESTERN

Ditch

Creek

Brushy

Branch

Brown

Bale

Hm

He

CaA

CaB

GrB

Tc

LeC2

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

This map is compiled on 1974 aerial photography by the U. S. Department of Agriculture. Soil Conservation Service and cooperating agencies.
Coordinate grid ticks and land division corners, if shown, are approximately positioned

ARKANSAS NO. 40

POINSETT COUNTY, ARKA

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 41

41

N

R. 2 E.

R. 3 E.

2 335 000 FEET

435 000 FEET

T. 10 N.

(Joins sheet 31)

(Joins sheet 40)

(Joins sheet 42)

2 355 000 FEET (Joins sheet 50)

425 000 FEET

Powers Slough

Powers Ditch

water

L'Anguille River

McCracken Ditch

1 Mile

5000 Feet

Scale 1:20000

POINSETT COUNTY, ARKANSAS NO. 41

This map is compiled on 1974 aerial photography by the U. S. Department of Agriculture Soil Conservation Service and cooperating agencies.
Soil boundaries shown are approximately positioned
Coordinate grid ticks and land divisions are correct if shown are approximately positioned

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 42

42

N

1 Mile

5000 Feet

Scale 1:20000

0 0 1000 2000 3000 4000 5000

R. 3 E. | R. 4 E.

T. 10 N.

2 380 000 FEET

435 000 FEET

425 000 FEET

2 360 000 FEET

(Joins sheet 32)

(Joins sheet 41)

(Joins sheet 43)

(Joins sheet 51)

Ditch

Landers Ditch

McCracken

Mardis Branch

England Creek

PACIFIC

MISSOURI

Branch water

L'Anguille River

POINSETT COUNTY, ARKANSAS NO. 42

This map is compiled on 1974 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies.
Coordinate grid ticks and land division corners, if shown, are approximately positioned.

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 43

43

N

POINSETT COUNTY, ARKANSAS NO. 43

This map is compiled on 1974 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies.
Coordinate grid ticks and land division corners, if shown are approximately positioned.

2 385 000 FEET

435 000 FEET

T. 10 N.

R. 4 E.

(Joins sheet 33)

(Joins sheet 42)

(Joins sheet 44)

(Joins sheet 52)

2 405 000 FEET

425 000 FEET

POINSETT COUNTY STATE PARK

Lake Poinsett

Creek

Distress

Cooper

Branch

Ditch No 8

DITCH NO 10

DITCH NO 1

Ditch No 3

Scale 1:20000

1 Mile

5000 Feet

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 44

(44)

N

R. 4 E. | R. 5 E.

T. 11 N.
T. 10 N.

(Joins sheet 34)

(Joins sheet 43)

(Joins sheet 45)

(Joins sheet 53)

2 430 000 FEET

2 435 000 FEET

425 000 FEET

2 410 000 FEET

1 Mile
5000 Feet
Scale · 1 : 20000

DITCH NO 23
NO 10
NO 39
DITCH
DITCH NO 1
No 38
Ditch

Mo
DdA
Sc
Sm
Ha

This map is compiled on 1974 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies
Coordinate grid ticks and land ownership comers, if shown are approximately positioned.

POINSETT COUNTY, ARKANSAS NO. 44

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 45

T. 11 N.
T. 10 N.
R. 5 E.
R. 6 E.
2 435 000 FEET
435 000 FEET
425 000 FEET
2 455 000 FEET
(Joins sheet 35)
(Joins sheet 44)
(Joins sheet 46)
(Joins sheet 54)

45

N

1 Mile
5000 Feet
Scale 1:20000

POINSETT COUNTY, ARKANSAS NO. 45

This map is compiled on 1974 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies.
Coordinate grid ticks and land division corners if shown are approximately positioned.

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 46

46

N

1 Mile

5000 Feet

Scale 1:20000

(Joins sheet 36)

(Joins sheet 45)

R. 6 E. | R. 7 E.

2 480 000 FEET

T. 11 N. | T. 10 N.

435 000 FEET

425 000 FEET

2 460 000 FEET

(Joins sheet 55)

(Joins sheet 47)

MARKED TREE

water

BORROW PIT

Ditch No 42

Ditch No 41A

Ditch No 41B

Ditch No 43

Ditch No 87

Ditch No 86

Ditch No 1

Ditch

ST LOUIS SAN FRANCISCO

RIVER

FRANCIS

SAINT

TYRONZA

Northern Ohio

SN

TnA TnU BqU BoU DdA DbU Cu Sc Sm Aa

This map is compiled on 1974 aerial photography by the U. S. Department of Agriculture Soil Conservation Service and cooperating agencies
Coordinate grid ticks and land division corners if shown, are approximately positioned

POINSETT COUNTY, ARKANSAS NO. 46

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 47

POINSETT COUNTY, ARKANSAS NO. 47

This map is compiled on 1974 aerial photography by the U.S. Department of Agriculture Soil Conservation Service and cooperating agencies
Coordinate grid ticks and land division corners, if shown, are approximately positioned

2 485 000 FEET

R. 7 E.

(Joins sheet 37)

T. 11 N.

T. 10 N.

435 000 FEET

(Joins sheet 46)

(Joins sheet 56)

2 505 000 FEET

425 000 FEET

(Joins inset A, sheet 38)

47

N

1 Mile

5000 Feet

Scale 1:20000

SAN FRANCISCO

ST LOUIS

TYRONZA

RIVER

Ditch No. 6

water

Tyronza

Sm

Sc

DbU

DdA

Aa

TnA

TnU

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 48

48

N

R. 1 E.

(Joins sheet 39)

2 310 000 FEET

420 000 FEET

T. 10 N.

(Joins sheet 49)

410 000 FEET

(Joins sheet 57)

2 290 000 FEET

1 Mile

5000 Feet

Scale 1:20000

0 0

1 ½ ¼ ⅛

1000 2000 3000 4000 5000

MERIDIAN

JACKSON COUNTY

PRINCIPAL

FIFTH

Threemile Creek

DEVIEW

BAYOU

Slough

Forked

Old

water

SOUTHWESTERN

ST LOUIS

Fisher

McCoy Ditch

Hm Tc Jc DdA An Fo DbU LgC2 He

18 19 20 21 22 23 24 25 30 29 28 27 26 31 32 33 34 35

This map is compiled on 1974 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies.
Coordinate grid ticks and land division corners, if shown, are approximately positioned

POINSETT COUNTY, ARKANSAS NO. 48

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 49

POINSETT COUNTY, ARKANSAS NO. 49

This map is compiled on 1974 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies.
Coordinate grid ticks and land division corners, if shown, are approximately positioned.

2 310 000 FEET

R. 1 E. | R. 2 E.

(Joins sheet 40)

420 000 FEET

T. 10 N.

(Joins sheet 48)

(Joins sheet 50)

410 000 FEET

2 330 000 FEET

(Joins inset, sheet 57)

49

N

1 Mile

5 000 Feet

Scale 1:20000

Ditch

No 15

Creek

Brushy

McCoy

Branch

One Mile

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 50

50

N

(Joins sheet 41)

R. 2 E.

R. 3 E.

2 355 000 FEET

420 000 FEET

T. 10 N.

(Joins sheet 51)

1 Mile

5000 Feet

Scale 1:20000

(Joins sheet 49)

410 000 FEET

2 335 000 FEET

CROSS COUNTY

L'ANGUILLE RIVER

Bottoms

Caney

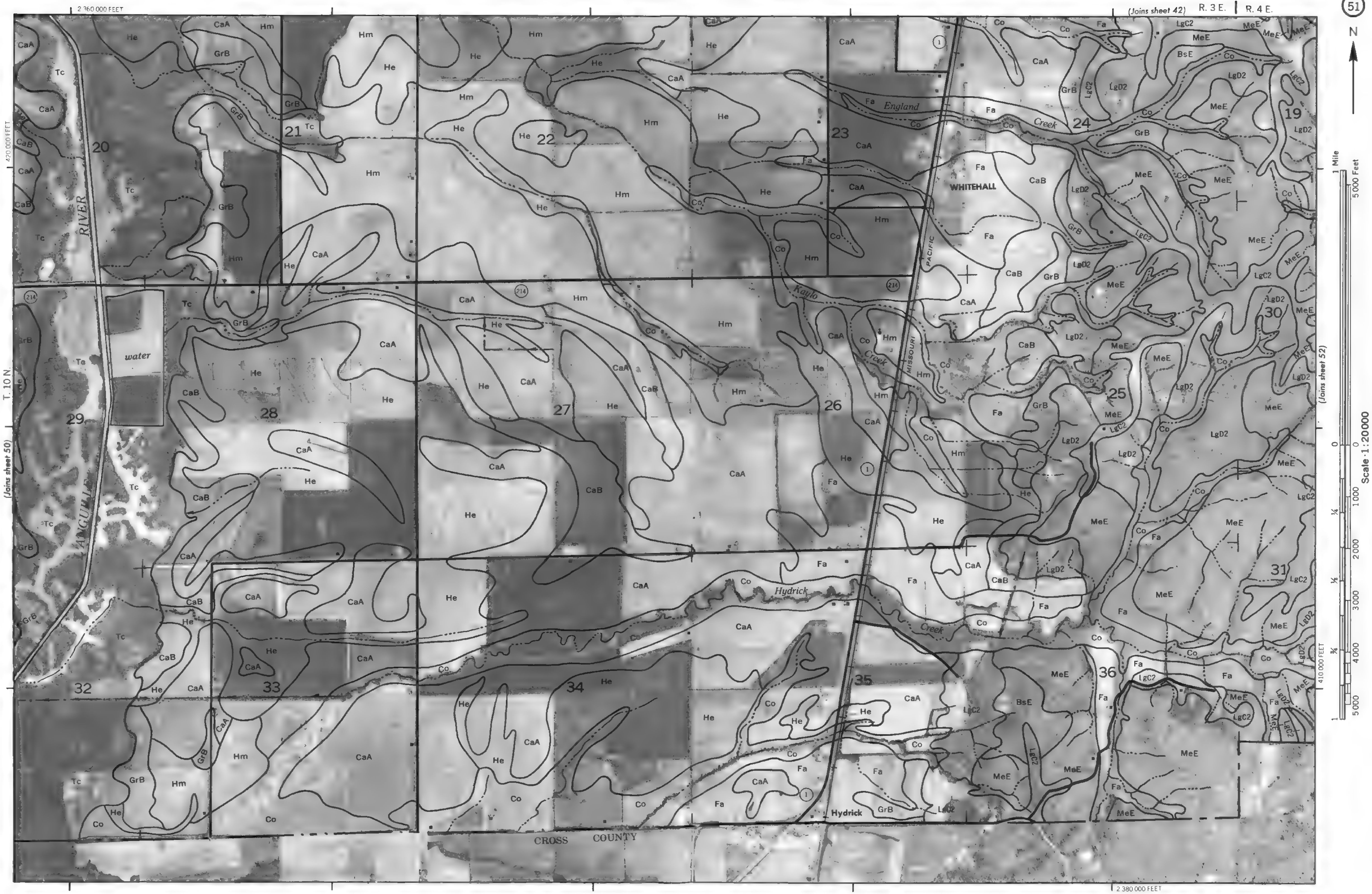
water

13 14 15 19 20 22 23 24 25 26 27 29 30 31 32 34 35 36

He CaA CaB GrB Hm Tc w

This map is compiled on 1974 aerial photography by the U. S. Department of Agriculture. Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners (if shown, are approximately positioned.

POINSETT COUNTY, ARKANSAS NO. 50



POINSETT COUNTY, ARKANSAS NO. 51

This map is compiled on 1974 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 52

52

N

R. 4 E.

2 405 000 FEET

(Joins sheet 43)

(Joins sheet 51)

1 Mile

5000 Feet

Scale 1:20000

0 0

1 1

420 000 FEET

410 000 FEET

T. 10 N.

(Joins sheet 53)

2 385 000 FEET

CROSS COUNTY

Otter Creek

Hydrick Creek

Bay Village

Ditch No 1

Ditch No 4

Ditch No 10

BORROW PIT

19 20 21 22 23 24

30 29 28 27 26 25

31 32 33 34 35 36

MeE LgC2 LgD2 BrD Co Fa GrB Mo Aa

This map is compiled on 1974 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies.
Coordinate grid ticks and land division corners, if shown, are approximately positioned

POINSETT COUNTY, ARKANSAS NO. 52

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 53

53

N

R. 4 E. | R. 5 E.

2 410 000 FEET

420 000 FEET

T. 10 N.

(Joins sheet 44)

(Joins sheet 52)

(Joins sheet 54)

2 430 000 FEET

410 000 FEET

CROSS COUNTY

1 Mile

5 000 Feet

Scale 1:20000

0 ½ ¾ 1

0 1 000 2 000 3 000 4 000 5 000

DITCH NO 1

DITCH NO 10

DITCH NO 39

DITCH NO 23

BORROW PIT

DITCH NO 109

Slough Hod

Ditch No 37

Ditch No 78

Ditch No 79

Ditch No 35

Ditch No 71

DdA Mo Sc He TnA SN Aa

POINSETT COUNTY, ARKANSAS NO. 53

This map is compiled on 1974 aerial photography by the U.S. Department of Agriculture, Soil Conservation Service and cooperating agencies
Coordinate grid ticks and land division corners, if shown, are approximately positioned

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 54

54

N

1 Mile
5000 Feet
Scale 1:20000

R. 5 E. | R. 6 E.

T. 10 N.

2 455 000 FEET

420 000 FEET

410 000 FEET

2 435 000 FEET

(Joins sheet 45)

(Joins sheet 53)

(Joins sheet 55)

Ditch No 108
Ditch No 35
DITCH NO 60
DITCH NO 67
Ditch No 41
Slough
Ditch No 44
Sand
DITCH NO 109
Steep Gut Bayou
Bayou
Ditch No 41
SAINT FRANCIS RIVER
Ditch No 6

SN
Sm
Sc
DbU
TnU
TnA
DdA
Dah
BeU
BoU
Aa
Ec

CROSS COUNTY
CRITTENDEN COUNTY

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Coordinate grid ticks and land division corners, if shown, are approximately positioned

POINSETT COUNTY, ARKANSAS NO. 54

POINSETT COUNTY, ARKANSAS NO. 55

This map is compiled on 1974 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 56

56

N

(Joins sheet 47)

R. 7 E.

2 505 000 FEET

420 000 FEET

T. 10 N.

(Joins sheet 55)

(Joins inset B, sheet 38)

410 000 FEET

2 485 000 FEET

CRITTENDEN COUNTY

Tyronza

No 6

Ditch

water

ST LOUIS

SAN FRANCISCO

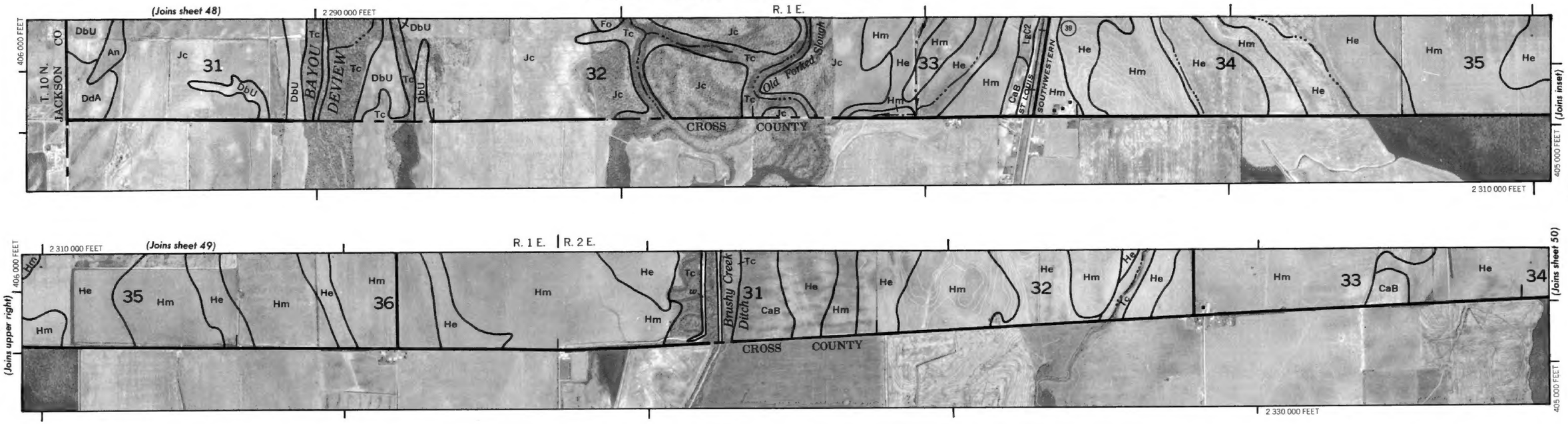
Scale 1:20000

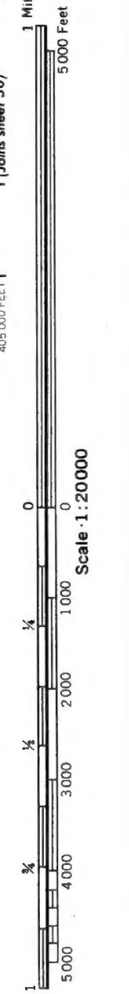
1 Mile 5000 Feet

This map is compiled on 1974 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies.
Coordinate grid ticks and land division corners, if shown, are approximately positioned.

POINSETT COUNTY, ARKANSAS NO. 56

POINSETT COUNTY, ARKANSAS — SHEET NUMBER 57





POINSETT COUNTY, ARKANSAS NO. 57

This map is compiled on 1974 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies.
Coordinate grid ticks and land division corners, if shown, are approximately positioned.